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ABSTRACT

This document presents an instructional unit consisting of lessons designed to heighten second graders' awareness of the dangers of substance use. It is expected that students who complete the unit will be able to differentiate safe and dangerous substances and make wise choices regarding substance use. The unit's major instructional divisions focus on: (1) safe use of substances; (2) identification of hazardous substances; (3) safety rules for dangerous substances; and (4) decision making regarding substance use. The instructional program was developed through the instructional systems design process, a systems approach model involving analysis, design, development, implementation, and evaluation. Analysis revealed that there are many learning and teaching materials that address the problem. Design activities established the unit's goals and determined prerequisites for the knowledge level and behavior skills of entering students. Internal processes of learning were related and compared to selected methods and media. Formative and summative evaluations indicated that the instruction was effective. Measures, the instructional materials package, and other related materials are appended. A total of 32 references are cited. (RH)

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THE SCHOOL OF MEDIA AND ARTS

of

NEW YORK INSTITUTE OF TECHNOLOGY

announces the

Final Examination

of

Rhonda E. Parris

for the degree of

MASTER OF SCIENCE

in

TRAINING AND LEARNING TECHNOLOGY

A Learning Activity for At-Risk Second Grade Students in Substance Awareness

Abstract

This document presents an examination of the analysis, design, development, implementation, and evaluation of an instructional unit on substance usage and awareness. The designer applied the systematic approach outlined in the Instructional Systems Design process in the formulation of multimedia learning activities. The instruction guides second grade students through the proper use of substances and the enhancement of decision making skills. Formative and summative evaluation techniques were utilized to ensure the best possible results. A complete description of the development process is provided. Recommendations are presented for use by other educators.

Friday, June 29, 1990 at 2:30 p.m.

in

Conference Room, French Chateau
Old Westbury Campus
Old Westbury, NY

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A LEARNING ACTIVITY FOR AT-RISK SECOND GRADE STUDENTS IN SUBSTANCE AWARENESS

a

THESIS/PROJECT

by

RHONDA E. PARRIS

submitted to the faculty of the
School of Media and Arts

of

NEW YORK INSTITUTE OF TECHNOLOGY

in partial fulfillment of the requirements for the degree of

MASTER OF SCIENCE

in

TRAINING AND LEARNING TECHNOLOGY

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CHAPTER 1

INTRODUCTION

Overview

Drug abuse has become one of the most serious problems plaguing America today. Drug usage nationwide has reached alarming levels in almost every segment of our society. Substance misuse has been found in urban and rural environments as well as in poor, middle class, and affluent settings. In a recent poll, Americans identified drugs as the most important issue confronting our nation (US Department of Education, 1987). Statistics also reflect a trend of substance abuse at earlier ages by our youth. Additionally, there has been a tremendous increase in the use of the most harmful illicit drugs by children. When adolescents were recently surveyed in a Gallop Poll to identify the biggest problem facing young people today, drug usage was at the top of the list (US Department of Education, 1987).

In an effort to stem the tide of drug usage, a major nationwide initiative is being undertaken at the federal level to combat this seemingly ever increasing problem. Federal, State, and Local funds have been allocated to battle the influx of drugs into the United States. Laws have been revised to stiffen the penalties for lawbreakers. In addition, various prevention, intervention and treatment centers have been set up to handle the drug problem. Although research has not indicated significant advancement in the fight, prevention through drug education appears to be the most logical and progressive means of dealing with the dilemma.

In response to the drug problem, then Secretary of Education, William Bennett, published a handbook entitled What Works: Schools Without Drugs. The handbook was devised to assist parents, schools, and communities in setting up a successful school-based drug education program. Additionally, the NY State Board of Regents in 1979 adopted the Regents Action Plan to Reduce Alcohol and Drug Abuse in Schools. The Drug Education Curriculum Guide set forth by the State is intended for use in all New York public primary and secondary schools. The recommendations include objectives that will enable students to:

- learn credible information about drugs;
- improve their self concept (self image);
- communicate effectively with others; and
- solve problems and make informed responsible decisions.

The regents action plan strives to remove the self destructive and/or misdirected motivations of people who engage in drug misuse and abusive behavior (State Education Department, 1986). The State Education Department further states that the accomplishment of the above aforementioned objectives will result in significant reduction of:

- referrals for drug-related activities and absences;
- instances of disruptive behavior among students; and
- instances of school property damage (State Education Department, 1986).

Despite the efforts and recommendations made by the federal and state legislatures, many regional districts have yet to implement effective drug prevention and enforcement measures.

While school programs alone cannot alleviate the drug problem, it is clear that the most promising and effective approach is to educate our youth as early as possible.

Background

Research has shown that drug/substance usage has had a direct negative effect on school achievement as well as put students in jeopardy of not completing school.

> "Drugs erode the self-discipline and motivation necessary for learning. Substance usage causes a decline in academic performance as well as having close ties to truancy and dropping out of school." (Friedman, 1985)

Studies also suggest that initial drug use is occurring at an increasingly earlier age. The percentage of students using drugs by the sixth grade has tripled since 1975. In the early 1960s marijuana use was virtually nonexistent among thirteen-year-old students, but now approximately one in six thirteen-year-old students have used marijuana (National Institute on Drug Abuse; Miller, Cisin, Abelson, 1983).

It is incumbent for every school district to take part in the fight against drugs. Primary school educators are fortunate enough to be in the position to direct positive motivation in children concerning attitudes and decision making about health habits, usually before drug experimentation occurs. Early prevention programs that focus on providing factual information as well as building self-esteem and enhancing decision making skills clearly seem to be the best defense against the problem.

In accordance with the Regents Action Plan for establishing a sequential K-12 drug prevention curriculum, the objective of this

document is to present a series of lessons (component of a whole program) designed to heighten children's awareness to the dangers of substance usage. It is designed for use at the second grade level. The four major instructional areas of this unit are: 1) The Safe Use Of Substances; 2) Identifying Hazardous Substances; 3) Safety Rules For Dangerous Substance; 4) Decision Making Regarding Substance Usage.

Statement of the Problem

The temptation to use drugs and illicit substances is a major problem facing today's youth. This problem is further magnified in minority low socio-economic areas.

Traditionally, health practices and values were viewed as the sole responsibility of the parent. However, substance usage among the young has a direct negative affect on school behavior as well as place them "at-risk" of completing their education. It is incumbent for primary school educators to take part in helping children develop sound health values and practices as early as possible. It becomes even more important to address this issue in communities where children appear to have little family and community support and reinforcement.

The problem is multi-faceted: 1) the need to motivate the students to understand the need for practicing good health habits and safe substance usage; 2) to convince students that the practice of sound health habits now, will have positive long term effects; 3) the need to make proper personal choices and decisions regarding substance usage; 4) the need to help students identify their own feelings and the feelings of others.

The target population for substance awareness instruction is the second grade students of the Martin Luther King Jr. School in Wyandanch, New York. This low socio-economic community, predominately minority, has been ravaged by the influx of drugs. Illegal drug usage in this area appears to have become commonplace. Unfortunately for many, it appears to be accepted and recognized as a part of routine life. Young children who are exposed to this environment have a higher risk of imitating the patterns. Children do not automatically develop good health values as they grow older. They must be taught the proper facts, skills, and practices to establish a basis for accepting sound health practices. They must also be provided with role models that support and reinforce good health practices. Judging from informal classroom interviews and observations, most students in the target population have not been exposed to sound health practices regarding substance usage.

A district wide program on substance abuse prevention has been introduced at the secondary and upper primary grade levels. However, the district does not offer a sequential coordinated drug prevention program aimed at the "at-risk" student on the lower primary level. In response to the problem, an age appropriate instructional unit on substance usage was developed based on the specific needs of the target population.

Purpose of the Project

The purpose of the proposed project is to create an awareness, among students at the second grade level, of the effects of substance misuse.

The unit will present students with factual knowledge and

decision making skills that can enable them to make knowledgeable choices about personal health practices. Additionally, this unit will focus on enhancing self-esteem among students. The secondary benefits of this unit is that it can be easily incorporated into a district wide curriculum on substance abuse. The use of the systematic five-step approach of the instructional systems design; analysis, development, design, and implementation and evaluation (Dick & Carey,1985) were utilized in the unit's creation.

Definition of Terms

The following terms are defined for their use within this thesis/project.

1. At-Risk student--A student with a high potential or probability to drop out of school prior to graduation. The student could be considered "at-risk" due to the many and potential factors contributing to their environment (i.e., single parent families, drug and substance abuse, economic level, etc.).

2. Early Prevention--Providing elementary school students with both the cognitive and affective skills that will stimulate the development of good health attitudes and practices prior to their first direct experience with harmful substances.

3. Instructional Materials--Those items such as handouts and exhibits that the students will use during the course of the instructional unit.

4. Instructional References--Those items that provide further background and activities on the topic of drugs such as books, articles, and drug fact sheets, etc.

5. Remedial Student--A student whose achievement test score

does not meet acceptable standards; a need for reinforcement in one or more of the basic skill areas (stanine scores: 4 or below ... scale 1 - 9).

6. Support Services--Assistance obtained from local district, school administration, community agencies, churches, local government, and the private sector.

7. Target Population--second grade students in the Martin Luther King Elementary School, Wyandanch, New York.

Assumptions

1. That the students possess a limited knowledge of sound health practices.

2. That the students have limited knowledge regarding substance abuse.

3. That early prevention to introduce good health practices will result in informed knowledgeable decisions regarding future substance usage.

4. That if good health habits are learned and practiced, they contribute to sound decisions when confronted by influencing factors.

5. That if "early prevention" regarding substance abuse is practiced, a lower number of instances of substance abuse will be realized.

6. That early training to introduce good health practices will produce proper future attitudes.

Limitations

That the activities addressed in this project were designed for the target population, second grade students of the Martin

Luther King Elementary school, in the socio-economically depressed area of Wyandanch, New York. While many of the factors may be common to other areas, the approach or content may not be suitable to other school districts without modification.

Methods and Procedures

The method employed with the development of this instructional unit on substance usage was based on the instructional systems design (ISD) process. This process refers to the overall systematic activities involved in the creation of a learning environment; from analysis of needs, through evaluation of the entire project. This approach is commonly utilized, and may be applied to meet the needs for a single lesson, unit or complete course of study. The underlying premise of this approach is the identification of what knowledge or skills the learner needs to have mastered at the completion of instruction. Instruction is then developed based on the skills identified, and is thereby specific to the desired goal.

The predominant resource used for the design of this instructional unit is Dick & Carey (1985). The approach advanced in the book leads the developer through the systems approach model based on ISD. The five phases of ISD are: analysis, design, development, implementation, and evaluation.

Analysis

As a second grade instructor in a school located in a low socio-economic area, the need for substance awareness at this level was perceived. This need for instruction was validated by observation of the target population and results of attitude

surveys completed by the school staff.

A review of available material was initiated to determine their relative effectiveness into such a unit. This review concluded that materials from a number of areas and/or sources could be culled and made part of a coordinated instructional unit geared to the target population with minor modification to the materials. A determination was made as to the desired goal of the unit as well as the development of the task analysis.

Design

Results of the analysis phase was used to develop and organize instructional goals. In the curriculum design phase measurable behavioral (performance) objectives were prepared. Written statements defining exactly when, what, and how well the student must perform during the course of the unit were devised. The objectives were written based on the pragmatic approach outlined by Mager (1984).

The learner's entry level behaviors and characteristics were assessed. Additionally, a determination of the appropriate pre and post test items were developed. Finally, the design was circulated and commented on by colleagues as well as assessing several of the target learners.

Development

In the development phase both teaching and learning strategies were established. Lesson plans describing exactly what the learner/instructor will do to achieve the specified objectives were written. Then the recommendation of the most appropriate methods, media, and materials were made. The methodology selected reflected a blend of developmental theories about how young children think

and learn. Existing materials were reevaluated for their adequacy and adapted to fit specific needs. A multi-media approach was decided on in meeting the needs of both the students and goals. The instructional strategies used for the development of the unit were based on approaches advanced by Gagne (1985) and Anderson (1983).

Implementation

In the implementation phase, instruction was delivered to the target population according to the revised specifications of the design. Written tests were administered to the learners and performance checklists were completed by the instructor. The data was collected and the results analyzed in order to provide feedback for further revisions.

Evaluation

A formative and summative evaluation was performed to ensure that the students achieved the intended objectives and instructional goal.

A one-on-one trial, small-group trial, and pilot implementation was conducted in the formative evaluation stage. The information collected was used to revise and improve the efficiency and effectiveness of the materials (Dick and Carey, 1985).

In the summative evaluation phase, the final version of the instruction was delivered to the target population. The purpose of the summative evaluation is to describe the absolute or relative effectiveness and feasibility of instruction. In this evaluation, the designer seeks to determine whether the instruction made a difference in student learning. The outcome of this evaluation substantiated the need for instruction as well as

supported changes made to the design.

Summary

The ravages of drugs and substance abuse are plaguing our society. Usage among our nation's youth is increasing at alarming rates, especially in lower socio-economic communities. A coordinated sequential education program is a way to combat this trend. A problem at hand is that many school districts don't have a fully developed sequential program on the subject at the primary level. A method of addressing this problem was the development of an instructional unit focusing on substance awareness designed for the second grade students in the Martin Luther King Elementary School. A secondary benefit of this unit design is that it could be readily incorporated into a district-wide program.

In the analysis stage, it was determined that many learning and teaching materials exist. However, some of these materials needed minor modification and additional materials added to meet the needs of the target population. The design stage established the unit's objectives and goals as well as determine the student's entry level knowledge. Gagne's instructional events approach was applied to the unit in the development stage and a evaluation was conducted. The unit was implemented with the target group and a summative evaluation was performed. The overall process was conducted in accordance with the five stages of the instructional system design.

CHAPTER 2

ANALYSIS

Introduction

According to the instructional systems design model, analysis is the first process in curriculum planning. There are three steps in the analysis stage. In the needs analysis or assessment, a determination of the instructional need is made. It establishes whether this need can be accomplished through instruction using the most appropriate media and methods. The next step is the job task analysis. This procedure identifies the gap between the present performance and the desired goal. This is accomplished by the review of learning materials available and identifying the specific tasks (i.e., knowledge, skills, attitudes) necessary for the attainment of the instructional goal. Once each task is identified, it is then broken down into an array of steps needed to perform the tasks. The third step is the target population analysis. This step assesses the general skills and behavioral characteristics of the learners and determines entry level knowledge.

Needs Analysis

The development of an instructional unit on substance usage and abuse at the second grade level is the direct result of the need outlined in the Drug Education Curriculum (New York State Education Department, 1986). The knowledge of certain substances and their effect on future physical development is critical to the social as well as physiological development of today's youth.

The overall state curriculum addresses the topical outline for a curriculum as for grades K-12. Another factor affecting the specific need was the lack of a detailed, in-district program, designed for the target population. Further methods used to validate the need for the design were the results of structured interviews with in-house staff and special interest groups as well as teacher judgement based on close observation of the target population.

The designer conducted personal interviews with six second grade teachers, two school administrators, and two members of support service staff. A copy of the questions asked during the interview is located in Appendix A. The overall view of those polled was that drugs pose a threat to the student population and, indeed, put them "at-risk" of completing their education. All participants agreed that every effort should be made, as early as possible, to incorporate a coordinated school-based program. Seven out of ten respondents stated that in addition to the school's role, support from parents anu community agencies is essential to the success of any substance abuse prevention program. Additionally, the three areas that were described as most critical to students in grade levels K-3 were as follows: 1) enhancing self esteem; 2) providing a strong foundation for identifying safe and unsafe substances; and 3) developing decision making skills. Six out of ten respondents revealed that it had been their observation that the young children of Wyandanch are very "street wise" about illicit drugs, however, the basic foundation of factual knowledge and practices for promoting sound health have not been established. It was suggested that instruction should or must include the basic

skills for maintaining health as well as address the immediate, more sophisticated concerns of the students.

Job Task Analysis

Five main tasks were identified as requiring instruction. These tasks were identified as the required skills and prerequisite knowledge needed to identify safe and unsafe substances and practices. Once the tasks were identified and arranged in logical sequence, steps required for the completion of each task were established. These tasks were designed to assist students in making wise health choices now and throughout their lives. A chart of the various tasks are illustrated in Appendix B.

Target Population Analysis

The target population for which instruction was designed was the second grade students of the Martin Luther King Jr. Elementary School, Wyandanch, New York. The study of this population was conducted using data from the children's academic records, personal observations of students and their community, unstructured interviews with parents during conferences, and student responses to the questionnaire located in Appendix C.

Initially, the class consisted of twenty-five students (13 girls and 12 boys) with ages ranging between seven and eight years old. They were heterogeniously grouped with a wide range of academic abilities. Standard test scores revealed various achievement levels. Some children's abilities were one year below grade level (remedial), while others were on or above grade level. At implementation time, however, the number of students had decreased to fifteen. Some students were removed for alternative placement and others transferred to new schools.

Others were used in one-to-one and small group evaluations. The target population summary is shown in table 1.

Table 1

Target Population Summary

	Initial Target Population	Population at Time of Implementation
Total Students	25	15
Percentage Total	100	100
Remedial Students (D or below)	8	4
Percentage Total	32	25
Retention Students	2	0
Percentage Total	8	0
Average Students (C-B)	11	8
Percentage Total	44	45
Above Average Students (B+ or above)	6	3
Percentage Total	24	30

All of the students are black and from a low socio-economic background. Most are from single parent households, where the mother is the only wage earner and authority figure. Some come from homes where the income is supplemented by social services. Others are being raised by grandparents or guardians.

It has been documented that the community of Wyandanch is troubled by a number of social problems, some of them being high drop-out rate, high rate of substance abuse, high unemployment, and high crime rate. The very nature of the community may pre-dispose these students to problems of drug experimentation at an early age. Several parents/guardians revealed that their children are exposed to the ills of drug abuse in their homes. In the classroom, many

of the children use slang vocabulary to describe illegal substances and their usage.

A questionnaire was prepared for the target population. After the questionnaire was developed, it was tested on a small group of students. The questionnaire was revised to clarify terms misunderstood by the students. It was also decided that the questionnaire would be delivered orally, by the instructor, because of the students limited reading and spelling ability. The instructor recorded the responses on a checklist illustrated in Appendix C.

The responses to the questionnaire revealed inconsistencies in health related routines. The majority of students do not have a scheduled time to rise, eat, or go to bed. They do not have schedules to develop good study habits. All students admitted to knowing someone who smoked, used alcohol, and used drugs. Some students admitted to experimentation with tobacco or alcohol. However, none admitted to experimentation with illegal drug use. Complete results of the questionnaire are summarized in Table 2.

The results imply and substantiate the need for instruction that will enable children to make informed choices for the establishment of good health habits.

Organizational Constraints

According to Gagne (1985) one of the most dependable methods of establishing attitudes is by means of a set of learning conditions that include human modeling. In accordance with the above theory and based on the Anderson (1983) media selection process, educational television was one of several media considered most appropriate to enhance the intended goal.

Table 2

Results of Student Questionnaire

		% of the Sample
A.	Exposure to or Personal Experience with Substances	
	Exposed to cigarette smoke in their home	72
	Believe that cigarette smoking is harmful	40
	Tried cigarette smoking at least once	4
	Exposed to alcoholic beverages in their home	80
	Believe that drinking alcohol can be harmful	24
	Tried alcoholic beverages at least once	20
	Exposed to drug use in the home (illicit drugs)	40
	Believe that drug use is harmful	52
	Tried drugs at least once	0
B.	Health Related Routines	
	Established bed time	24
	Routinely eat breakfast at home before school	56
	Take vitamins daily	32
	Takes medicine at least once a week	8
	Follows rules for substance use in home	40

The designer previewed an educational television presentation on WLIW/TV channel 21 entitled "Well, Well, Well." The health program was designed for students grades one through three. In the presentation the main character, Mr. Slim Goodbody, sings and instructs his way through the cognitive and affective concerns of good health. Elements of the show covered aspects of the instructional unit and were deemed appropriate for inclusion into the unit.

Restraints to the use of this medium were: 1) availability to the school's video equipment (television) was limited and could not be pre-reserved for the regularly scheduled broadcast times; 2) when the television was available, reception was poor since cable services were not available; 3) the lack of sophisticated video recording equipment made it impossible to tape television channels above thirteen.

In view of the above, an alternative film was substituted for and used instead of the instructional television presentation.

Instructional Goal

Given learning activities that integrate both knowledge and values, at the completion of the unit, the students will demonstrate the ability to classify safe versus dangerous substances. The students will also demonstrate confidence in their ability to make decisions.

Analysis of the Instructional Goal

The instructional goal was analyzed to classify the desired outcome according to the kind of domain of learning that will occur (Dick & Carey, 1985). The goal statement encompasses sub-skills from three learning domains: intellectual (cognitive), verbal information, and attitudes.

One desired outcome for this instruction was for students to learn factual information about substance usage. Learning factual information can be classified as a cognitive skill.

Another desired outcome of the unit was for the students to be able to state and apply rules for the safe use of substances. According to Gagne (1985), understanding and stating rules can be classified as verbal information.

Throughout instruction, it was expected that students be able to apply the facts and rules learned to solve problems and make informed decisions regarding substance usage. Additionally, the aim was to influence the learner's attitude regarding improper substance usage. The Anderson (1983) flow chart method for matching the most appropriate media to learning outcomes was used

to create a multimedia method approach for this instruction.

Literature, Existing Course, and Material Review

For the purpose of the design and development of the instructional unit, instructional references are defined as those items that provide further background and insight on the topic of drugs. These items consist of books, articles, pamphlets and fact sheets on substance usage and school-based prevention education. Instructional materials are defined as items such as handouts and exhibits deemed suitable for use by the students in the classroom setting. Additionally, filmstrips and audio presentations made to the target population are also defined as instructional materials.

A determination on the availability of existing materials was necessary. The materials had to be appropriate for classroom use in a second grade setting. Sources used for the search of existing literature and materials were the ERIC (Educational Research Information Center) database, the United States Department of Education, InfoTrac Magazine Index Plus, the Owl Resource Center, and the Bi-County (Nassau and Suffolk) Drug and Alcohol Conference.

Related Theory

In order to achieve significant long term behavioral changes, an instructional program must present factual information as well as enhance skills to address personal and social growth. When instruction is planned to result in effective learning, the goal statement must be classified to the appropriate learning domain (Gagne, 1985). The different requirements for learning outcomes must then be matched to the most effective media and methods. The Anderson (1983) flow chart was instrumental to the process of

selecting the most appropriate media and methods for this project.

The learning goal for this project encompasses sub-skills from three domains: intellectual (cognitive), verbal information, and attitudes.

Dick and Carey (1985) state that there are four types of intellectual skills: discrimination, concepts, rules, and problem solving. In the learning process the students were engaged in identifying and discriminating safe and unsafe substances; asked to apply rules for substance usage, problem solving, and determining a solution to hypothetical situations involving drug usage. Printed material such as books and worksheets as well as overhead projectors, flipcharts, and lecture discussions were instrumental in reinforcing cognitive skills.

Stating information so that its propositional meaning is preserved is categorized as verbal information learning (Gagne, 1985). It was expected that the students be able to communicate the precautions necessary for safe substance usage. The use of pictures and real objects were essential in enhancing verbal information skills.

One aim of the instructional unit was to influence the learner's attitudes and values regarding substance usage. Drug prevention efforts must focus on people and factors that influence their behavior (Gerne and Gerne, 1986). According to contemporary theory, all behavior has both affective and cognitive (intellectual) aspects. Jean Piaget, renowned for his studies of childhood development, found that cognitive activity could not be divorced from the total functioning of the child (Pulaski, 1986). Piaget states that through social interaction, primarily through

peer relationships, children start to formulate moral attitudes in a series of stages similar to the stages of intellectual development (Piaget, 1965).

Piaget further states that intellectual development can be viewed as the process of adaptation to the environment by the individual. This development progresses through a series of identifiable stages with associated charateristics. The continuous process is divided into four major categories: sensorimotor (birth through two years old), pre-operational (two through seven years old), concrete operational (seven through eleven years old), and formal operational (eleven years through adulthood). A summary describing the four stages of cognitive development and their related characteristics is located in Appendix D. Piaget's Theory emphasizes that instruction should be based on and respectful of the child's natural capacities and constraints (Labonwitz, 1980). The characteristics of the learners were a major consideration in the design of this project. A complete target population analysis was conducted in the analysis phase. The results revealed that the learner's capabilities and characteristics were closely related to what Piaget describes as the concrete operational stage of development. In this stage, children display the ability to perform simple operations with physical objects, capable of reversibility, reasons deductively, and applies simple logic to arrive at conclusions. Additionally, children functioning in the concrete operational stage are no longer bound by egocentrism. Their ability to comprehend feelings, actions, and the reactions of others surface (Thibault and McKee, 1982). In consideration of the above characteristics, instruction was designed to incorporate

manipulatives when appropriate as well as include examples and demonstrations that emulate real life situations. The students were encouraged to engage in cooperative learning with their classmates, brainstorm ideas, and make personal decisions and solve problems.

One of the most dependable set of events that has been found to produce changes in attitude is the phenomenon of human modeling (Gagne, 1985). The use of film and cassette were the media most available to meet this need. Role playing, problem solving situations, and open discussions were also used.

The characteristics and needs of the learner also supported the decision to use a multimedia/method approach. Young children learn by doing, acting out, by handling objects, seeing pictures and hearing stories. Therefore, information must be presented in a concrete form in order for them to absorb it, process it, and assimilate it (Gerne and Gerne, 1986). Additionally, a variety of methods make it easier to adapt to individual differences among students (State Education Department, 1986).

Another consideration affecting media choice was the academic ability of the students in the target population. Several students were identified as being remedial (lower achieving) learners. Some characteristics considered were that remedial students: 1) learn physically; 2) absorb information while using their hands to manipulate; and 3) have short attention spans and lower levels of concentration (The Ohio State University, 1981).

In view of the above, elements of the instructional unit were tailored to meet the needs of the target population.

Literature Review

Seven publications, defined as literature, were identified by the designer as appropriate for the instructional unit. The ERIC database listed two hundred seventeen publications as a result of a search using the descriptors substance abuse, school based drug education, health education for elementary curriculum, decision making, coping skills, nutrition, at-risk, minorities and elementary health curriculum development. The publications encompassed a wide range of topic areas such as substance intervention, adolescent drug problems, patterns of substance abuse and psychological usage patterns and demographics. Ten publications were culled from the list as being specific to the instructional unit. Of the group of ten publications, two were deemed germane to the instructional unit as well as appropriate for the target population. The United States Department of Education listed thirty-five publications ranging from intervention programs to model schools diagrams. One publication was deemed germane to the instructional unit as well as appropriate for the target population. The New York State Education Department listed twenty publications, primarily on curriculum design and development. One publication was deemed germane to the instructional unit as well as appropriate for the target population. InfoTrac Magazine Index Plus listed twenty-five publications ranging from drug prevention to psychological studies for substance usage. None of the publications were deemed germane to the instructional unit or appropriate for the target population. The Owl Resource Center, a local teacher resource reference facility, listed fifteen publications ranging from prevention and intervention to referral

services. None of the publications were deemed germane to the instructional unit or appropriate for the target population. The Bi-County Drug and Alcohol Conference listed numerous publications and pamphlets primarily on prevention and services. Three of the publications were deemed germane to the instructional unit as well as appropriate for target population.

1. C. Steele. (1988). Substance abuse prevention: A curriculum model correlation: The early years. New York: Rensselaer County Department of Mental Health.

This preschool and kindergarten substance abuse prevention curriculum guide informs teachers about basic prevention concepts and provide a plan for integrating these concepts into an early childhood education program. The curriculum is centered on four prevention theme units of self-awareness, decision making, healthy living, and communication. The booklet contains specific class activities, drawings and reproducible activity sheets.

2. Cooperative Educational Service Agency 8. (1977). Teacher activity package: Drug information: Grade 2-6. Appleton, WI: Cooperative Educational Service Agency 8.

The package is geared for teachers of primary and intermediate students emphasizing the use of factual materials in conjunction with having students learn about themselves, their values, and decision making. The activities are directed toward making the child understand what constitutes a drug and how drug abuse is defined, classifying household medicines, and understanding the different effects of major drugs. Charts on different drugs, their uses and effects are provided for the teacher. The design of the package is to promote the proper use of drugs by students, and to

help them consider for themselves the propriety of using or abusing drugs.

3. State Education Department. (1986). Drug education curriculum: Grades 1-2: Substance abuse prevention. Albany, NY: The University of the State of New York.

This curriculum guide is one of nine sequential manuals for elementary and secondary teachers and administrators designed to prevent drug misuse and abuse through activities for the development of the students affective and cognitive skills. The guide provides the rational for the prevention program as well as the philosophy and design of the curriculum, evaluation, instructions to teachers, and samples of teaching methods. The format for the instructional units consist of concepts, learning objectives and activities, and teacher information and resources. The activities for the curriculum focused on making choices, self-image, social interactions, health, and the wise use of substances.

4. United States Department of Education. (1987). What works: Schools without drugs. Washington, DC: United States Department of Education.

This pamphlet outlines the initiatives for an action plan on the part of parents, schools, students, and communities to achieve a drug-free educational environment. The booklet traces the extent of drug usage in schools and cites facts and information on the development of substance use. The responsibilities of each affected segment of society (parents, schools, students, and communities) are cited in the attainment of the goal of schools without drugs.

5. Nassau County Department of Drug and Alcohol Addiction.

(1987). "About" series. Deerfield, MA. Channing L. Bete., Inc.

These publications are a number of informational pamphlets on various topics of public interest. The selected pamphlets range from such topics as alcohol and health, teens and drugs, cocaine, and Aids. The contents of each pamphlet provides basic information on the topic areas and useful facts and tips on each.

6. Suffolk County Department of Health Services. (1988). "Streetwise" series. New York: Suffolk County Division of Drug Abuse Services.

These publications are a number of informational fact sheets on various substances. The sheets contain informative tips on such substances as alcohol, PCP, marijuana, cocaine, etc., presented in an easy to read page format.

7. National Center for Health Education. (1986). "Growing healthy": Grade 2. New York: National Center for Health Education.

This curriculum guide program is one of eight sequential manuals designed for elementary and secondary teachers and administrators to help children make informed decisions about their bodies and health. The program is a comprehensive model that provides methods, materials, and training as well as offering room for new topics, originality and flexibility. The program is easily integrated with other subject areas and fosters improvement in basic academic skills.

Survey of Existing Courses and Materials

The only existing course on the topic of substance usage on the second grade level at the Martin Luther King Elementary School was part of a one-week health presentation made by the school

nurse. This instructional unit was developed to augment and supplement this presentation and expand on the areas of substance abuse prevention.

Nine publications, defined as materials, were identified by the designer as appropriate for the instructional unit. The ERIC database listed two that were appropriate for the target population, the Owl Resource Center supplied two, additional materials were obtained as the result of the review of supplemental activity packages available to the designer from the Bi-County Drug Prevention Conference.

1. Gerne, T. and Gerne, P. (1986). Substance abuse prevention activities for elementary children. Englewood Cliffs, NJ: Prentice-Hall, Inc.

This activities book is written for teachers and counselors of grades K-6 to use in making children aware of the dangers of substance abuse. Activities are prepared for classroom use and are divided by grade level. There are forty-three pages of activities and program concepts devoted to second and third grade students, however, modification of other grade activities were relevent to the instructional unit.

2. State Education Department. (1986). Drug education curriculum: Grade 2: Substance abuse prevention. Albany, NY: The University of the State of New York.

The curriculum guide is one of nine sequential manuals for elementary and secondary teachers and administrators designed to prevent drug misuse and abuse through activities for the development of the students' affective and cognitive skills. The activities for the curriculum focus on making choices, self-image,

social interactions, health, and the wise use of substances.

3. Creative Teaching Press. (1987). Investigating science: Our bodies. Huntington Beach, CA: Creative Teaching Press.

This is a twenty-page booklet of interdisciplinary activities and hands-on experiments on the topic of health. The activities focus on making children aware of their bodies and the establishment of good health practices.

4. Hegeman. (1985). "What to do?". New York: Trillium Press. Inc.

This sixty-three-page book is a compilation of problem solving activities for children. None of the exercises were on the topic of substance usage. This book provides a format for problem solving and decision making activities.

5. Richmond, Ponds, Corbin. (1987). Health for life. Glenview, IL: Scott, Foresman and Company.

This thirty-two-page book is a series of activities on the topic of health education. There are three pages of activities that directly relate to the topic of substances. The contents dealt with defining drug related terms, safe use of medicines, and reading precription labels.

6. National Center for Health Education. (1986). "Growing healthy": Grade 2. New York: National Center for Health Education.

This pre-packaged program has eight sequential manuals designed for elementary and secondary teachers to help children make informed decisions about their bodies and health. The curriculum and materials at the second grade level offers a five-phase approach to the study of health. Each phase involves the

study of one of the five senses. In phase five there is a unit that focuses on substance usage that directly relates to this project. Student activity worksheets served as a model for the development of activity sheets and printed teacher resource charts.

7. Educational Activities, Inc. Drugs, poisons and little children, (1980). Freeport, NY: Educational Activities, Inc.

This animated ten-minute filmstrip and cassette provided examples of safe and improper use of medicines and other household substances. It discusses the harmful affects of improper usage, as well as outlines the rules for safe use of substances by children. Instructions for the use of the filmstrip and suggested follow-up activities are included.

8. Weekly Reader Publications. (1988, March). Stay away from poisons. Weekly Reader Publications, pp. 1-4.

This pre-packaged monthly periodical is designed for elementary and secondary students geared for the appropriate grade level. Each edition contains articles and activities on a varied range of topics. This edition focused on the affects of some dangerous substances and rules for the safe handling of poisons.

9. Office for Substance Abuse Prevention. (1989). Crack down on drugs coloring book (ADM 89-1618). Reprinted. Rockville, MD: National Clearinghouse for Alcohol and Drug Information.

This eight-page coloring book is geared for students grades K-3. The content illustrates and reviews situations encountered by children regarding substance usages. It also reinforces rules for substance usage as well as highlights ways of combatting peer pressure.

In addition to the above listed instructional materials, the

designer utilized other resource materials at her disposal. All materials used required minor modifications prior to inclusion into the instructional unit.

Plan For Design And Development Effort

In the analysis phase, a need for an instructional unit on substance usage was determined by the designer. Following this needs assessment, the designer proceeded with the design, development, and implementation of this instructional unit.

Estimated Student Effort

The estimated student effort is four hours and forty-five minutes. The instructional unit is designed to provide the students with a basic foundation of facts and decision making skills regarding substance usage. The unit was presented in five forty-minute sessions. Each session was paced to accomodate the varied learning levels of the target population. The total estimated time for in-class instruction, review, and testing is three hours and twenty minutes. The individual sessions were augmented by homework activity sheets on the days topic area. It is estimated that each day's activity sheet should take the students approximately fifteen minutes to complete. The total estimated time for reinforcement activities is one hour and fifteen minutes.

Project Plan

A time line was developed by the designer at the beginning of the project. The initial step, needs assessment, commenced September 26, 1988. The final step, summative evaluation, ended May 22, 1989. The development stage ended March 10, 1989 following

the collection of materials for the instructional unit.

The designer utilized a PERT (Program Evaluation and Review Technique) chart to isolate any time conflicts and interruptions. The designer adhered to the chart closely in order to meet the projected completion date. A log was estabished to note actual time required versus projected time. This was established so that appropriate recovery measures could be initiated to meet the projected completion date. The major events list, Gantt and PERT charts are located in Appendix E.

Budget

The budget for the instructional unit was based on the prorated salary of the instructor, the instructional publications and materials, and the learning tools. The prorated cost for classroom use and equipment is based on an estimate provided by the principal of the Martin Luther King Jr. Elementary School. The prorated salary was based on instructional time at $32.00 per hour. The instructional unit was presented during five forty-minute sessions. Grading and evaluation of the students's work took approximately two weeks. Exhibits and exercise sheets for the unit were copied on the school's copier at a estimated cost of $0.10 per page. The instructional unit consisted of 30 exercise sheets for each of the students in the target population. Table 3 summarizes the budget for the instructional project.

Table 3

Budget for Instructional Unit

Expense	Designer Hours	Other Hours	Cost	Subtotal	Total
Labor					
Analysis	30	0	$960		
Design	65	0	2,080		
Development	75	0	2,400		
Implementation	20	15	1,120		
Evaluation	30	15	1,440		
Total Labor				$8,000	
Materials					
Instructional media			$17.50		
Equipment			1.00		
Classroom			1.00		
Stationary items			75.00		
Total Materials				$ 94.50	
Grand Total					$8,094.50

Summary

The proliferation of drugs and substance abuse has become a scourge on our communities nationwide. As a result of the target population analysis, the designer identified the awareness of harmful substances as the instructional goal. At the completion of this instructional unit the students will be able to distinguish safe versus dangerous substances. The students will also demonstrate

the ability to make wise choices regarding substance usage.

Five main tasks were identified and necessary in order to achieve the instructional goal. The goal for the project encompassed sub-skills from three learning domains: intellectual, verbal information, and attitudes. The students discriminated safe and unsafe substances; applied rules for substance usage; used problem solving to determine solutions to hypothetical situations involving drug usage; used problem solving to determine solutions to hypothetical situations involving drug usage.

The mediums chosen were film with audio cassette, real objects, overhead projector, visual aids, and printed material. The characteristics and needs of the learners supported the decision to use a multimedia/method approach. Young children learn by doing and taking an active role in the instructional process.

Existing literature and materials were researched for possible inclusion into the instructional unit.

A budget for the instructional unit was prepared and estimated.

CHAPTER 3

DESIGN

Introduction

The curriculum design stage of the instructional systems design gathered the results of the analysis phase to develop and organize learning goals. Specific skills, knowledge, and attitudes that the learner will achieve at the completion of the instructional process were determined. Measurable behavioral (performance) objectives defining exactly when, what, and how well the student must perform were also prepared. Entry level behaviors and characteristics were assessed as well as the identification of the most appropriate learning environment. Additionally, test items were produced to ensure that proficiencies are properly evaluated. The completion of this stage resulted in an instructional plan.

Instructional Task Analysis

An instructional task analysis was performed. To begin this phase, the designer defined the instructional goal. The goal encompassed learning skills from three domains: attitudes, intellectual, and verbal information.

In the analysis stage a job task analysis was also performed. The results of this analysis were used to compile a list of sequential steps (skills) that the learner must accomplish in order to successfully perform the intended goal. According to Dick and Carey (1985), if required tasks are omitted from the job analysis, instruction may prove to be ineffective. Conversely, if

superfluous skills are included, they may interfere with the learning of required skills. Five main tasks were identified as critical in mastering the goal of distinguishing safe versus dangerous substances. Each of the five tasks were broken down into their respective subordinate skills. The results were the basis of the instructional design. The task analysis is located in Appendix B.

Instructional Objectives

The definition of an instructional objective is the desired performance or result the designer wishes the learners to exhibit prior to considering the learner competent in the topic area. An objective describes an intended result of instruction, rather than the process of instruction itself (Mager, 1984). Instructional objectives are the direct result of the task analysis, therefore, each task identified should have at least one objective associated with it.

The three characteristics of an objective are: performance, conditions, and criterion. The performance characteristic establishes what the learner is to be able to do. The condition characteristic describes the important conditions (if any) under which performance is to occur. The criterion identifies the degree of mastery or level of performance that will be considered acceptable. The designer completed objectives to correspond with the five main task and their respective subordinate skills.

Performance Objectives

1.0 In their own words the students will define the drug related terms: substance, drug, safe, dangerous, poison, caution,

alcohol, consequence, judgement. The students must correctly define all terms.

2.0 Given a list of substances, the students will identify the same by naming those that if used properly can maintain and protect health. The students must correctly identify all substances listed.

3.0 Given a list of dangerous substances the students will identify the same and list the health consequences to their usage. The students must also circle the warning labels displayed on dangerous substances. The students must correctly identify all substances as well as explain the meaning of the warning words. The explanation must include the words "alert to danger."

4.0 In their own words, the students must explain the rules for the safe use of medicines, unfamiliar substances, and substances with a poison label. The explanation must include the words "parents permission must be received before taking any substance except food."

5.0 Given a problem solving situation, the students will explain what they would do in the given situation. The students must state whether the substance is safe or dangerous and make a decision regarding usage that will protect their health.

Entry Behaviors Defined

In order to design effective instruction, entry behaviors must be identified. Entry behaviors are those skills that students must have before they begin instruction (Dick and Carey, 1985). The designer identified five entry behavior skills which the majority of the target population had already mastered in order to begin the

planned instruction on substance usage:

1. read printed material on or above first grade level
2. distinguish between food and non-food substances
3. write a complete sentence
4. categorize (sort) pictures
5. use student dictionary as a research aid

Group and Sequence Objectives

The five instructional objectives relate to the five main tasks. During the design stage, the five main tasks and subordinate steps or subskills were grouped in a logical sequence or learning hierarchy. They are: defining substance related terms, recognizing safe substances, recognizing dangerous substances, determining the rules for substance usage, and sorting and decision making alternatives regarding substance usage. The instructional objectives were also placed in a logical sequence in order to provide an orderly transition from one lesson to another. They are listed and identified sequentially in the Instructional Objectives section of this project.

Learning Activities Specifications

The time frame for the instructional unit is five forty-minute sessions. This includes the unit's introduction, completion, feedback, and summary.

The Information Processing Theory of Learning and Memory (Gagne, 1974) outlines internal processes that take place in order for learning to occur. Gagne's nine instructional events provide support to the internal processes involved in learning. Gagne (1985) states that for young children it is advantageous for the

instructor to use the entire set of events as a means of external support. Table 4 relates the internal processes to the instructional events and instructional plan for this project.

Table 4

Internal Processes, Instructional Events and the Instructional Plan

Internal Process	Instructional Event	Instructional Plan
	Introduction	
1. Reception	Gain attention	Provide stimulus to gain attention and motivation
2. Expectancy	Inform learner of objectives	Tell learners what they will be able to do
3. Retrieval to working memory	Stimulate recall of prior learning	Relate previously learned skills/ knowledge
	Development	
4. Selective Perecption	Present Stimulus	Present instructional activity
5. Semantic Encoding	Provide learning guidance	Provide concrete examples/demonstrations
6. Responding	Elicit performance	Demonstrate newly learned skill
7. Reinforcement	Provide feedback	Communicate degree of correct performances
	Summary	
8. Retrieval and Reinforcement	Assess performance	Relate concepts/ generalizations
9. Retrieval and Generalizations	Enhance retention	Evaluation; provide review varied intervals

For each learning objective one or more learning activities were chosen by the designer. A variety of media, methods and

activities were chosen to make it easier to adapt to the diverse needs of the target population. The choice of activities, instructional method and media was based on the characteristics best suited to the identified learning domain (outcomes) and on what is known about the emotional and intellectual development of young children. According to Piaget's Theory (Labinowicz, 1980), curricula should be based on an analysis of intellectual demands of tasks in relation to children's natural capacities and constraints. Long range goals should be sequenced from concrete to abstract. Therefore, young children learn by doing, acting out and actively participating in the learning process. Table 5 is a matrix that displays the content, instructional method, and media for each of the five main objectives.

Table 5

Content, Methods and Media Selection

Learning Activity	Content	Instructional Method	Media
1.0	Definition of substance related terms	Lecture/Class discussion	Printed materials instructional game
2.0	Identifies substances that can be used safely	Class discussions demonstration	Self constructed visual aids/print overhead projector real objects
3.0	Identifies dangerous substances	Filmstrip supported lecture/ structured class discussion experiment and demonstration	Filmstrip/self constructed visual aids/real objects overhead projector
4.0	States rules for safe use of substances	Lecture/discussion brainstorming	Printed materials charts chalkboard
5.0	Chooses to use substances safely	Discussion problem solving role playing	Printed materials visual aids

Assessment System Specification

The assessment used for the unit included a pretest and post test.

Pretest

The pretest is given as a means in determining if a need for instruction exists. The pretest assesses the level of the knowledge or skills to be taught. The instructor can make a determination on the extent of prior knowledge the students have through the use of the pretest. The pretest has twenty test items consisting of multiple choice and fill in the blank questions. The pretest is in Appendix F.

Post Test

The post test is administered at the end of the instructional unit. The post test assesses the levels of knowledge or skills learned. The instructor can make a determination on the extent of the knowledge learned through the post test. The post test consist of the same questions and format of the pretest. The post test is in Appendix G.

Evaluation System Specification

Two evaluations were used for this instructional unit; formative evaluation and summative evaluation.

Formative Evaluation

The formative evaluation is the process instructors use to obtain data in order to revise instruction to make it more efficient and effective (Gagne, 1985). The three basic phases of the formative evaluation is one-to-one or clinical evaluation, small-group evaluation, and the pilot test implementation.

In the data collection stage of the formative evaluation the designer gathered all of the information required for making decisions regarding the improvements of instruction. Only information directly related to possible revisions were considered. The information collected from the one-to-one, small-group, and pilot test evaluations included the following:

1. Test information from the pretest, review tests and post test.

2. Review of all printed materials for omissions in content, inappropriate wording, typographical errors, unclear wording, and errors in sequencing.

3. Required time for completion of the instructional unit, both from an individual session and overall unit perspective.

Summative Evaluation

The summative evaluation summarized the results of the instruction. It occurred after the final version of the instructional unit was produced and data was collected to access the unit's effectiveness. It took take place following instruction, and had minimal or no effect on final structure or content. The summative evaluation of the instructional unit was based on Kirkpatrick's four levels: reaction, learning, behavior, and result. The summary of the instructional unit used in the summative evaluation is located in chapter five.

Learning Transfer System Specification

The transfer of learning refers to the application of the newly acquired skills to the learner's normal daily routine. The approach used throughout instruction provided the learners with

concrete hypothetical experiences that simulate potential everyday occurrences.

The actions taken to support the transfer of learning included administration involvement, staff development training, linkage, and follow-up activities. The basic objective of the instructional unit was to present a forum for the formulation of sound health habits and the proper use of substances. As a means to facilitate the transfer of acquired skills, the designer discussed the instruction with administration prior to instruction, in order to gain full support. Pre-instructional preparation included instructor training in the topic area. Involving parents in the learning process provided a vital link between classroom activities and daily routines. Additionally, the designer developed pragmatic methods of reinforcement of the unit's objectives. The reinforcement was accomplished through a systematic review and correlation of the objectives with other curriculum topic areas such as social studies, health, and science.

Review and Selection of Existing Materials

During the analysis stage, publications were identified that contained information about substance abuse prevention. Two were selected for inclusion in the design of the instructional unit.

1. Gerne, T., and Gerne, P. (1986). Substance Abuse Prevention Activities for Elementary Children. Englewood Cliffs, NJ: Prentice-Hall, Inc.

This reproducible activity book provided a format for the design of several student worksheets that were incorporated into

the learning package. The designer provided continuity by including these activity worksheets in the follow-up section of the instructional materials package located in Appendix I.

2. Weekly Reader Publications. (1988, March). "Stay Away from Poisons." Weekly Reader Publications, vol 30; Issue 21. Middletown, CT: Field Publications.

The Weekly Reader is a monthly publication received by all of the second graders in the Wyandanch School District. The issue selected directly relates to the topic of this instruction and was used to motivate and direct the learners attention to the lessons to follow.

3. Educational Activities, Inc. Drugs, Poisons and Little Children. (1980). Freeport, NY: Educational Activities, Inc.

This ten-minute filmstrip and cassette was used to augment the presentation in lesson three. Instructions for the use of the filmstrip and follow-up activities are suggested in the accompanying teacher's guide. Some of the suggestions were incorporated into the lesson.

4. Office for Substance Abuse Prevention. (1989). Crack Down on Drugs Coloring Book (ADM 89-1618). Reprinted. Rockville, MD: National Clearinghouse for Alcohol and Drug Information.

This eight-page coloring book was used as reinforcement during the follow-up activities. The written content as well as the illustrations were suitable for the target population. A copy of the coloring book is located in Appendix I.

Summary

The design stage of the instructional systems design began with the task analysis. The results of the task analysis listed five main tasks with subordinate skills required to distinguish safe versus dangerous substances. The instructional goal was identified and instructional objectives were written for each main task. Instructional objectives were grouped and sequenced to take advantage of the natural order of the subject matter and to promote design efficiency.

Gagne's internal process of learning were correlated and compared to the methods and media chosen for the lessons in the instructional unit. The assessment used for the instructional unit included pretest and post test.

The two types of evaluations used for the instructional unit were formative and summative. The transfer of learning will be accomplished through the systematic reinforcement of acquired skills through other curricular presentation. The final step in design stage addressed the rational for the inclusion of two existing publications within the instructional unit.

CHAPTER 4

DEVELOPMENT

Introduction

In the third stage of the Instructional Systems Design, development, the designer specified the learning activities utilized, and reviewed and evaluated the instructional unit's materials. The results of this stage established the format for each session of the instructional unit.

Learning Activity Development Scheme

The establishment of a learning activity development scheme encompasses the identification of the strategy that will be used in instruction and the determination of the preferred media to be used to achieve the instructional goal. An instructional strategy describes the general components of a set of instructional materials and the procedures that will be used with those materials to elicit particular learning outcomes (Dick and Carey, 1985). The five major components of an instructional strategy are pre-instructional activities, information presentation, student participation or practice and feedback, testing and follow-through activities.

Prior to the presentation of the instructional unit to any student, the designer tested the concept idea with a colleague with twelve years of teaching experience who is also the second grade chairperson. This teacher was given approximately twenty percent of the instructional unit. The reviewer felt the design and approach would be met with a favorable response from the target

population. One suggestion was made regarding the length of each session of the instructional unit--reduce session time from one hour each to forty minutes each. The designer incorporated this suggestion into the design.

Learning Activity Development

The characteristics and needs of the learners supported the decision to use a multi-media approach in the instructional unit on substance usage. This is further supported by the fact that children learn by doing, acting out, handling objects, seeing pictures and hearing stories. The development of the learning activity package included concrete objects, pictures, filmstrip, and printed materials.

Pre-instructional Activities

The development of the instructional materials began with the pre-instructional activity and the pretest. The pre-instructional activities consisted of the identification of ways to: motivate student interest on the topic of safe substance usage; inform learners of the objectives; establish required entry level behaviors and prerequisite skills; evaluate the learners' knowledge on the topic of substances.

Motivation

To gain student motivation and interest in the subject matter the designer used the Weekly Reader entitled "Stay Away From Poison." In this issue, Zip, Buzz and Nip, familiar characters to the learners, were involved in a potentially dangerous situation regarding the use of hazardous substances. Since the characters in the story are so familiar to the learner, the students were

motivated by trying to help their friends out of a dangerous predicament. Students read and discussed the problem, identified choices, and tried to determine a solution. The instructor's responsibility was to guide the discussion and lead the learners to the conclusion that if Zip, Buzz and Nip were better informed about safe and dangerous substances, they probably could have avoided the situation. At that point, the instructor informed the students of the goal for the unit of study.

Objectives

The instructor informed the learners of the objectives through oral language supplemented by the use of pictures depicting a healthy child that practices good safety rules. The learners were informed that at the end of the unit, they would have a lot of information about things that are safe and dangerous for their bodies. This information would enable them to make informed choices about maintaining good health. It was important to keep the students directly informed of each objective at the beginning of each individual lesson. The following is an outline of objectives for each lesson:

Lesson #1 - At the end of the lesson, you will know and understand various words that will help you to make wise decisions about the things that you put in your bodies.

Lesson #2 - At the end of this lesson, you will be able to recognize medicines and other substances that, when used properly, will promote good health.

Lesson #3 - At the end of the lesson, you will be able to recognize many hazardous substances and warning labels that will alert you to danger.

Lesson #4 - At the end of the lesson, you will also be able to name at least three rules that you can follow to practice good safety.

Lesson #5 At the completion of the lesson, you will be able to use the facts that we learn to solve problems regarding substance usage.

Prerequisite Skills

The prerequisite skills outlined in the instructional analysis are not significant enough to require testing of demonstrated mastery skills. A brief description of the required entry behaviors was provided to inform the learners that instruction will proceed with the assumption that they could perform the required skills.

Entry Behavior

Entry behavior test were not administered. It was determined that if the learners did not possess the required prerequisite skills, a lesson covering the required subskills would be inserted as the first lesson in the unit. However, all students demonstrated the required subskills necessary to begin instruction.

Pretest

There was a pretest administered prior to instruction. The pretest was used to motivate learners, inform the learner of the objectives, and provide feedback to the instructor. For the pretest, students were asked to complete multiple choice and fill in questions based on tasks identified in the unit.

The next step was the development of the learning activity package. Considerations were given to how the information would be presented to the learners as well as the manner and degree of student participation.

Information Presentation

The results of the instructional analysis established that the

instructor would proceed with the assumption that the students could perform the required skills. Information presentation is half of the interactive part of the lesson. In order to maintain attention and interest throughout the instruction, the instructor involved students in activities such as role playing, the handling of real objects, seeing pictures and films, listening to tapes and stories, and using concrete manipulatives and making crafts. The information was presented in a concrete form in order for the students of their age and maturity level to absorb, process, and assimilate the concepts. Additional methods used to present information and maintain attention were group discussion, brainstorming techniques and problem solving activities.

The instructor presented the information through several media choices. An outline of media choices for each lesson is provided in Chapter 3, Table 5 of this document. Each lesson was sequenced based on the appropriate skills and attention levels and contained significant examples and nonexamples.

Student Participation

The development of the second part of the interactive component of the learning process involved methods of providing practice and feedback to the learner. The learning process was enhanced by providing the learners with an opportunity to practice each new task introduced. Practice items were developed using various methods. The instructor presented the information with an opportunity for the learners to practice newly acquired information through activity exercises, written tasks, role playing, and discussion. Positive verbal feedback was given to the learners.

During the times when the students were completing exercise sheets, the instructor would randomly review the sheets of students and provide them with information regarding their performance.

Testing and Evaluation

The three evaluation items that were developed to assist the designer after the instruction had taken place consisted of a post test, behavior checklist, and a post-learning questionnaire.

Post Test

A cumulative post test was included and designed to be administered after the completion of the final lesson of the instructional unit. The test consisted of twenty multiple choice and fill in questions that were identical to the pretest. The test was used to diagnose problems students were experiencing with subordinate skills. The post test assessed the level of acquired knowledge from the instructional unit.

Behavior Checklist

The behavior checklist consisted of the steps and tasks necessary to achieve each objective and states whether the learner has achieved all of the objectives. The behavior checklist is located in Appendix J.

Post-Learning Questionnaires

An attitude survey was developed to assist the designer in assessing the materials, objectives, activities, and tests of the instructional unit. The students were provided with a yes or no response questionnaire as a means of providing feedback about information and activities. The questionnaire is located in Appendix H.

Follow-Up Activities

After the materials, lessons, and evaluation items were completed, the designer developed follow-up activities for both remediation and enrichment.

Remediation

Additional time and activities were planned for those students who did not master the instructional goal. Additional practice would be provided for those students in a small group setting. Homework assignments also provided added reinforcement. Reteaching materials and methods varied from those originally designed. They involved an increase in hands on experiences for the students. Additionally, the delivery of information would be at a slower pace and delivered in a more concrete fashion. Instruction would also include media such as filmstrips, videos, or motion pictures that served to model behavior. Extensive remediation was not needed for the target population, however, additional materials can be found in the follow-up activity section of the instructional learning package.

Enrichment

For those students who are more capable, independent activities were considered. A learning center or task center was constructed to develop skills and knowledge around the specific topic. Students worked in learning centers independently or in groups. Some learners completed all tasks while others completed just certain tasks. They worked in the center at assigned times or during free time. Learning centers are extremely flexible and adaptable to the specific needs of individual students.

The instructional unit based on Gagne's instructional events are summarized as follows:

1. Gain Attention - Pretest - Printed - A pretest on the entire unit was presented to the target population prior to instruction. This focused the student's attention on the topic of substance usage. Reception was also gained by visual and auditory stimuli related to the content of each lesson.

2. Inform Learners of Objectives - Verbal - The learners were told that they would be able to make informed decisions regarding substance usage. The learners were informed of each objective at the beginning of each individual lesson.

3. Stimulate Recall of Prior Learning - Verbal/discussion - Subject introduction through the use of character's familiar to the learners. In a class discussion, the instructor recalled prerequisite rules and concepts by relating them to previous science lessons on dental health. Attention was also focused on previously discussed lessons on obeying school rules.

4. Presenting the Stimulus - Printed/Verbal/Film/Audio Cassette - The instructor described the course materials through demonstration of objects and symbols as well as a review of all instructions. Additionally, the instructor described the students' role of taking responsibility for their own personal health. A description was given of the problem situations and the students were shown what the strategies given to them would accomplish.

5. Providing Learning Guidance - Printed/Verbal/Film/Audio - This was established through the use of varied distinctive concrete examples and nonexamples. Making the stimulus as meaningful as possible was accomplished through elaborating on the topic content and relating it to known concepts.

6. Elicit Performance - Printed/verbal - This was accomplished

by allowing the learner to demonstrate and practice the newly learned skills. The skills become encoded into a form for storage in long-term memory. The instructor distributed activity exercise sheets as well a provided a forum for discussion.

7. Providing Feedback - Verbal - The instructor gave informational responses to the degree of correctness of the learners' performance. During each session the instructor observed work in process. This afforded the opportunity for verbal feedback from the instructor.

8. Assess Performance - Printed - Worksheets served as indication that the newly learned information was reasonably received. Homework assignments provided additional reinforcement.

9. Enhance Retention - Post Test - Printed - A post test on the entire unit was presented to the students following instruction. Retention was further reinforced by the correlation of the unit's concepts and objectives with other curriculum topic areas.

Learning Activity Review

The revised instructional unit was reviewed by the grade chairperson for content and accuracy. The designer had reviewed the unit to determine if it was grade level appropriate for grammar and vocabulary as well as for correct spelling, format, and content. Exhibits and activity sheets were reviewed for responsiveness to the design. The grade chairperson verified the accuracy of the unit's content. It was suggested that a letter to parents informing them of the substance usage instruction be included. The parent letter was included in the final version of the unit. The designer again reviewed the completed package to

ensure that the intended learning outcomes were met. The three major learning domains which encompass the intended instructional goal were: intellectual skills, verbal information, and attitudes.

The instructional goal was categorized according to the type of learning that was to occur. Defining substance related terms and recognizing safe and dangerous substances can be categorized as an intellectual skill. The learners were involved in a learning activity in which they had to match definitions to terms. They were also shown empty containers and pictures of various substances in which they sorted into categories. The students were also involved in problem solving activities in which they had to follow sequential steps. The overall process encountered by the learners is classified as intellectual learning.

The learners were responsible for stating rules for the safe use of substances. They participated in a hands-on experiment to determine whether a substance was safe or unsafe through the use of the sense of smell and the sense of sight. The conclusions drawn at the completion of the experiment formulated the rules for safe substance usage. Stating rules was classified as verbal information learning.

According to Gagne (1984) attitudes are internal states that govern choices of personal action. The learners were presented with hypothetical situations in which personal choices and decisions were made. The determination of personal choices constitutes attitudinal learning.

Materials For Evaluation Produced

Twenty-five copies of the unit's activity sheets were

produced. This quantity was sufficient to supply one to each student during the one-on-one, small group, and pilot test evaluations.

Summary

During the development stage of the instructional systems design, the activities of the instructional unit as well as the instructional strategy were developed. The unit was developed in a sequential manner. The unit and materials were reviewed by the grade chairperson and the designer for grade level appropriateness as well as for accuracy in vocabulary, grammar, spelling, and format. Twenty-five copies of the unit's materials were produced to allow one copy for each student during the formative and summative evaluation.

CHAPTER 5

IMPLEMENTATION

Introduction

In the implementation stage of the instructional systems design, the instructional unit was delivered to the population. It commenced with the completed and revised instructional unit. The course description for this unit is related to the topic of health and safety. Instruction was presented in a sequential form and included the following skills: (1) defining and determining substance related terms; (2) identifying that substances (such as medicines) can be used safely or dangerously; (3) identifying dangerous substances and warning labels; (4) stating rules for safe substance usage; and (5) problem solving and decision making regarding the use of substances. The students learned how to apply the facts and knowledge acquired to make wise choices about maintaining and protecting their health.

Problems and errors discovered during the formative evaluation were corrected and incorporated into the unit prior to the presentation of the unit to the target population.

Materials For Implementation Reproduced

The version of the instructional materials package used during implementation was a result of revisions made during the formative evaluation. Problems and suggestions made during the one-on-one and small group evaluations were incorporated in this version of the instructional unit. The media used to deliver instruction consisted of real and concrete objects (substance containers,

various household substances, etc.), teacher-made illustrations, cards, overhead projectors, filmstrip, and printed materials.

Fifteen copies of the unit's instructional materials were made for implementation. This version of the instructional unit can be found in Appendix I. For the actual presentation to the target population, all copies were enlarged on legal sized paper to provide easier reading, writing, and manipulation for the learners.

Instructional Delivery

The instructional delivery for all aspects of the formative evaluation took place in a second grade classroom in the Martin Luther King Elementary School.

The instructional unit designed for the second grade level uses a multi-media approach in creating an awareness to the problems of substance usage. Prior to any instruction, a letter was sent to the parents or guardians of each of the participating students. The letter informed the parents that the students would be taking part in a substance awareness program and solicited their participation in the student's homework exercises. The selection of media for each session is varied in order to maintain the level of attention of the students.

A pretest was administered to the students to determine prior knowledge about the topic of substance usage. The pretest consisted of twenty multiple choice questions. The test took approximately ten minutes to complete. The following is a review of the lesson presentation by session:

Lesson 1

The first lesson in the series in creating an awareness to the problems of substance usage focused on motivating student interest and defining drug related terms. The media and methods chosen for this lesson was print, discussion, and game.

The lesson began with a ten-minute lecture/discussion as outlined in the motivational activity in Chapter 4. The students were given a copy of the Weekly Reader entitled "Protect Your Health." In this issue Zip, Buzz, and Nip, familiar characters to the students, appear to be involved in a dangerous situation regarding hazardous substances. The students were asked to analyze and describe the picture. The instructor guided the discussion by asking the students to identify the problem and choices, as well as try to determine a solution. The students responses were recorded on the blackboard. Further discussion of the identified problem and possible solutions led the students to the conclusion that the characters needed to be more informed about safe and dangerous substances. At this point, the instructor informed the students of the goal of the unit and the objectives for the lesson to follow. The objective to this lesson was to familiarize the students with unknown substance-related terms in which they would encounter throughout the unit. The instructor introduced word cards for the following vocabulary words: substance; drug; alcohol; medicine; poison; caution; judgement; dangerous; safe; consequences; solution. After a discussion of the terms, the students were encouraged to use the dictionary as a research aid in defining terms. Dictionary usage is a required skill in second grade. The students were familiar with the format of the dictionary and accustom to its frequent use in the classroom.

The students were required to complete an activity involving matching substance related terms to words with the use of the dictionary (if required). These terms and definitions were also included on activity cards that were used to augment the exercise. Once all or the students completed the matching activity, they were instructed to remove the definition cards. The instructor conducted a game. The students had to remove the appropriate word card after its meaning was read. The worksheet, Substance Related Vocabulary is located in the instructional materials package. The students were able to define terms. This activity took approximately fifteen minutes.

To summarize the lesson, the instructor described how they would be using these terms to become better informed. The instructor explained the homework assignment sheet. Homework Assignment Sheet One is located in the instructional material package. The total elapsed time of this lesson was forty minutes.

Lesson 2

The second lesson in the unit focused on safe use of medicine and other substances that contain drugs. The media materials chosen for the lesson included real objects, printed material and class discussion.

The lesson began with a five-minute discussion reviewing the vocabulary words - substance and drug. The instructor emphasized that substances are neither safe nor dangerous in themselves. It is how people use them that make the outcome safe or dangerous. Students were asked to name substances other than food that are used to promote health. The children were led to the discussion of vitamins and medicines. The instructor explained that medicines

contain drugs as do other things such as cigarettes and beer, wine and liquor. The students orally read and discussed the information sheets on medicines, alcohol, and nicotine. The instructor used the overhead projector to point out the effects of these substances on various parts of the body.

Empty medicine containers were displayed, as well as empty alcohol bottles and cigarette packs. The students identified each container and discussed its safe and unsafe handling. They were encouraged to share times when they had to take medicines. Discussion involved who gave it to them and how it was given. The instructor advised that beer, wine, liquor and cigarettes also contained drugs. The drugs they contain and their usage by adults was reviewed. It was stressed that any drug, including medicine, can be harmful if too much is used or if it is used too often. The total elapsed time of the lesson up to this point was approximately twenty minutes.

A three-column chart was displayed, each with the following headings: "Medicine," "Alcohol," and "Nicotine." The teacher held up pictures cut from the worksheets entitled, "Teacher Activity Cards," located in the instructional learning package. The students who could identify the substance and the drug it contained was allowed to tape it to the chart under the correct heading. Note that specific drugs in medicine were too numerous to discuss. They were simply categorized as medicines. This activity took approximately ten minutes.

The instructor distributed the student worksheet "Safety Rules For Using Medicine." Students were instructed to color the spaces that indicate safe use of medicines. It took approximately five

minutes to complete the worksheet.

The lesson concluded with a review of each column of the completed chart and worksheet.

Lesson 3

The third lesson of the series of creating and awareness to the problems of substance usage focused on recognizing hazardous substances and warning labels. The media and methods chosen for this lesson were filmstrip with cassette player, real objects and printed materials, and lecture/discussion.

The lesson opened with a question and answer period reviewing the meanings of safe and dangerous substances. The instructor placed the words poison on the board and reviewed its meaning. The students were asked to name things that are poisonous. It was pointed out that poisons can be found anywhere. The students were then asked to discuss what might happen if someone swallowed something that was poisonous.

A review of the words warning and caution was conducted. The students were asked to recall times when warning or caution signs were seen and discuss traffic lights as well as reflectors on cars and bicycles as warning signals.

In order to help students recognize the warning labels for their own safety, they completed the worksheet entitled "Signs of Danger" by tracing over the commonly used warning words to complete them. It was explained that these labels are used on substances to alert us to danger. The worksheet and discussion took approximately fifteen minutes.

Empty containers that used in the previous day's lesson were displayed. Each student was given a container and instructed to

search for warning labels and circle the warning word on the container. The instructor pointed out that the mere presence of that word should alert us to danger and that the substance should not be used unless they have obtained parental permission. This activity took approximately five minutes.

A ten-minute filmstrip entitled "Drugs, Poisons and Little Children" was shown to the learners. The filmstrip concluded with a series of questions. Questions were posed to the students, then answers given on the sound track after students were given ample time to answer them. Concluding discussion included the following questions: 1) In what ways are non-food items helpful to us? 2) In what ways can they harm us? 3) What are some words that can alert us to danger? 4) What could happen if we used poison improperly?

To conclude the lesson, the instructor distributed and explained homework assignment sheet, "Dangerous Substances." The students were asked to elicit parental help in listing products in their homes that are potentially dangerous.

Lesson 4

Lesson four focused on identifying rules for safe use of substances. The media and methods selected for this lesson included the following: real objects, printed materials, experiments and demonstrations, game, and discussion.

The lesson began with a review of the previous day's lesson on dangerous substances. Students were told that it is not always easy to tell by looking whether a substance is safe or dangerous. Some substances do not have warning labels or have been moved from their original containers. The students were then divided into

small groups. Each group was shown two sealed identical soda bottles, both containing liquid that looked the same. The instructor explained that one bottle contains soda and the other bleach. Every pupil had an opportunity to examine the bottles by looking to see if it they could guess which was safe to drink. Additional experimentation included the use of substances such as pills resembling candy, and rat poison resembling oatmeal. After the student had ample time to examine the containers, the instructor guided the discussion asking why tasting to identify the substance is not a good idea. Further discussion led to the conclusion that it is better to discard an unused substance than taste it and chance using it. Each group was asked to brainstorm ideas for handling unknown substances. The children's idea were discussed a culled to develop rules for safe use of unknown substances. Rules established included: do not taste, do not touch or smell an unknown substance. Additionally, parental permission to use any substance is needed. The students continued the brainstorming to develop rules for safe use of medicines and substances with warning labels. This activity, including discussion, took approximately twenty minutes.

Noisemakers were given to the students. The instructor read short stories containing dangerous situations for children. The students were instructed to ring the noise maker whenever the instructor came to a part in the story where there was a problem with dangerous substances. These stories were read from the worksheet entitled "Storytime" located in Appendix I. Each problem was discussed, the substances involved identified, and rules to prevent these types of accidents reviewed. This activity took

approximately ten minutes.

The lesson concluded with the instructor explaining the day's homework assignment. Students were given a copy of the worksheets "Preventions Procedures for Dangerous Substances" and "Emergency!" located in Appendix I. The students were instructed to review and complete the worksheets with their parents and return the next day.

Lesson 5

Lesson five focuses on problem solving and decision making with regard to substance usage. The media and methods used in this lesson included printed materials, role-playing, problem solving, and discussion.

The lesson began with the instructor explaining to the students that it is each individual's responsibility to make choices about substances that they will use. It was further explained that sometimes children are confronted with situations, perhaps at school, at home, with friends, or maybe even alone. They will have to use the information learned to decide what to do. The instructor elicited the students' reaction to the comment by asking them to share times when they had to make decisions regarding substance usages. The choices, consequences, and final solution of several student examples were pointed out.

The students were then divided into small groups. Each group was given a activity sheet entitled "What Would You Do?" The instructor explained that each group would be responsible for solving the problem. Two or more students were to role-play the situation and one person would act as the recorder. The recorder's function was to write the possible choices, consequences, and final solution agreed upon by the rest of the group. The spokesperson

for each group would deliver the responses after the role-play presentation to the class. The instructor acted as the facilitator, observing each group and assisting when students needed clarification or help with spelling. Each group presented its role-play situation to the class. The class decided whether each solution was one that would protect their health. This activity took approximately twenty minutes to complete.

Each student was then given a picture in which there appears to be a problem involving potential substance usage. The students were provided with an individual activity sheet entitled "Problem Solving." This activity sheet and the associated picture can be found in Appendix I. The students were instructed to use the problem solving techniques used in the previous group activity to identify and solve the problem. A review of the activity sheet was conducted through class discussion. The instructor concluded the lesson by having the students complete the post learning questionnaire.

In order to enhance self confidence and self esteem, the instructor attempted to create a risk-free environment. In every lesson of the unit, the instructor acknowledged all student inquiries and discussions. All opinions were respected and only positive reinforcement and feedback was given. Rather that accentuate errors, encouragement of discussion provided further insight to the topic. An award certificate was designed and given to each student who successfully completed instruction. All students were excited to receive the awards. The award certificate is located in the instructional learning package.

A post test was given to the learners. This test was

identical to the pretest given at the beginning of the unit. By using the same test, it provided further insight to the actual knowledge gained through instruction. The post test is located in Appendix G.

Data Collection

During the implementation stage, data was collected for evaluating student progress at each of Kirkpatrick's (1987) four levels of evaluation. The instruments and process for collecting data are as follows:

1. Attitude questionnaire

A yes/no response attitude questionnaire was given to the learners proceeding instruction. The questionnaire was used to test the initial reaction to instruction and measure the value of its content.

2. Criterion-referenced test

A pretest and post test was used to gauge the knowledge gained through instruction. The identical tests consisted of twenty multiple choice and fill in test items. Students were expected to achieve at least eighty percent as a passing grade.

3. Behavior checklist

This instrument was used during implementation to record the presence, absence, frequency, and duration of the learners behavior. The checklist consisted of tasks necessary to achieve the instructional objectives.

4. Time allowance record

The designer recorded the average time it took for the students to complete the criterion-referenced test.

Summary

The instructional unit was completed according to the planned schedule. The target population consisted of black males and females from the second grade with a diverse range of academic abilities. All students were given a pretest. None of the students passed the pretest. One-on-one, small group, and pilot test evaluations were conducted. A cumulative post test, identical to the pretest, was given. All of the students passed the post test. Behavior checklist and attitude questionnaires were completed by the target population.

CHAPTER 6

EVALUATION

Introduction

The evaluation stage of the instructional systems design refers to the assessment of performance, identification of concerns and problems, as well as the review and revisions made to ensure the instructional goal is met. Evaluation is the ongoing procedure which begins at the analysis stage and continues past the actual implementation. The revisions and evaluation of the learning materials, instructional delivery, learning environment, and post-learning activities serve to refine instruction for the target population. For the purpose of this project, both a formative and summative evaluation were conducted. The content and methodology, as well as the value of this instruction for the target population, was assessed.

Formative Evaluation

The formative evaluation encompassed the collection of data and information during the development of instruction. Revisions made during the development attempted to increase the effectiveness of the instruction. According to Gagne (1985) the three phases of formative evaluation are one-on one, small group, and pilot test. The designer conducted all three approaches.

One-on-One Trials

The one-on-one evaluation was used to determine obvious problems with the instruction such as typographical errors or possible omissions. Additionally, this evaluation served to obtain

the learner's initial reaction to the teaching materials.

The one-on-one evaluation was conducted with three students representing a cross section of the target population. The unit was implemented as stated previously in the instructional delivery section. However, modifications were made in lesson five. In the lesson, the students were required to role play situations. Since this was impractical for the one-on-one evaluation, the role playing was replaced with extended discussion between the instructor and the student.

Student one was a female, age seven. The student's abilities were slightly below average. However, it was believed that she possessed the prerequisite skills necessary to complete the instruction. The unit was executed as stated in the implementation section. The instructor noticed that the student began to become less attentive during the last ten minutes of each lesson. This was a strong indication that sessions may be too long for those in the target population who have short attention spans. It was also evident that the student had difficulty and insufficient skills to answer some of the written questions on the criterion referenced test. However, the results behavior checklist reflect that after instruction, the student was able to answer questions orally.

The second student selected for the one-on-one was male, age eight. This student was considered to have average ability. The lesson was presented as stated in the implementation phase without modification. At first, the student was hesitant about participating in the lesson because it meant that he had to miss his allotted gym time in order to complete the instruction. After explanation of the value and importance of the lesson, he eagerly

participated. The designer made the decision to clarify instruction by reading aloud all directions and written questions during instruction. This student did not demonstrate any difficulty understanding the directions or questions on the criterion reference test. The student also maintained active participation throughout the lesson.

Student number three was a female student age eight. She appeared to have above average ability for her grade level. She is well adjusted and extremely verbal. The lesson was executed as stated previously without modification. Although the student did not appear bored, the lesson did not seem to be a challenge to this student. All of the questions that were asked were answered both rapidly and precisely. During one segment the student commented that "perhaps parents are unwise to store poisons in other containers." She also stated that she looks for indications of transferred or tampered containers on a regular basis. The written test was completed without the directions being read orally. The reaction to the lesson was favorable. She commented that she liked the experiments best. The post test and the behavior checklist indicated that she had mastered the necessary skills.

A pretest and post test was administered to all three learners. The results show that none of the students were able to pass the pretest. The results of the post test evaluation indicated that one student fell below the recommended mastery level of eighty percent. However, because of the one student's lack of reading and writing skills, she was unable to answer the questions properly. When questions were rephrased and asked orally, the student demonstrated satisfactory comprehension. The designer did not

believe that this student's lack of writing ability was a true indication of the target population. The students were required to write a definition of each term from the dictionary. However, this activity took much longer than anticipated and was revised for the small group evaluation. Based on the definition received from the students, the designer developed a worksheet of terms and definitions. These definitions and terms were also used to develop activity cards. The results of this change is contained in the small group evaluation.

Minor revisions to some of the test questions were made. Changes were reflected in the test that was given in subsequent evaluations. Overall, the one-on-one evaluation proved to be successful. The results of the criterion referenced tests are summarized in Table 6.

Table 6

Results of the Pretest and Post Test for the One-on-One Evaluation

Student	Pretest Score %	Pretest Raw Score	Post Test Score %	Post Test Raw Score
1	45	9 of 20	75	15 of 20
2	50	11 of 20	95	19 of 20
3	60	12 of 20	100	20 of 20
Mean	52		90	

The attitude questionnaire completed by each student following the one-on-one evaluation indicated that all of the students enjoyed the lesson and had a positive reaction to the methods and materials used. The results of the attitude questionnaire are summarized in

Table 7. Number one indicates a yes response, number two indicates a no response. The questionnaire is located in Appendix H.

Table 7

One-on-One Questionnaire Results

Student	Questionnaire Item #									
	1	2	3	4	5	6	7	8	9	10
1	1	1	1	1	1	2	1	2	1	1
2	1	1	1	1	1	1	2	2	1	1
3	1	1	1	1	1	1	2	2	1	1

Small Group Trial

The small group trials were conducted using six students perceived to be representative of the target population. The small group consisted of one student considered below average, three students considered average, and two students who appeared to have above average ability. All of the students in the group possessed the prerequisite skills required to complete the test and questionnaire. The group consisted of three females and three males, all age eight.

The lessons were executed as stated in the implementation section with minor revisions to the wording of several questions on the criterion reference test. The students enthusiastically participated in the lessons, often offering their perceptions and opinions on the topic. Each of the students progressed through the materials at generally the same pace with a minimum of individual detailed instruction.

During lesson three, the students recounted stories and

personal experiences regarding the handling of hazardous substances at home. The students enthusiastically volunteered their reactions to the instruction following the written test. Four of the six verbally indicated that they enjoyed the lesson (this may be due to the fact that they were actively involved in the lesson). The other two said they liked the filmstrip the best. The behavior checklist indicated that all six students had mastered the necessary skills.

Most of the instruction was an interactive activity with the instructor leading and directing the course of the lesson. The instructor had the opportunity to encourage confidence and provide frequent feedback to the learners.

The change in the instruction from defining substances related terms from the dictionary to the use of the worksheet and activity cards in lesson one, produced the same results in less classroom time.

The small group evaluation substantiated the success of the instruction. Table 8 shows the results of the pretest and post test. The results of the small group evaluation substantiated the fact that the amount of instructor intervention should not be changed. The pretest results show that none of the students passed, while post test scores reveal that all students scored at least or above the required mastery level.

Table 9 shows the results of the attitude questionnaire. The results of the questionnaire indicates that the students enjoyed the lesson and had a positive response to the materials presented.

Table 8

Results of the Pretest and Post Test for the Small Group Evaluation

Student	Pretest Score %	Pretest Raw Score	Post Test Score %	Post Test Raw Score
1	50	10 of 20	80	16 of 20
2	55	11 of 20	95	19 of 20
3	60	12 of 20	80	16 of 20
4	60	12 of 20	95	19 of 20
5	55	11 of 20	100	20 of 20
6	50	10 of 20	100	20 of 20
Mean	55		92	

Table 9

Small Group Questionnaire Results

Student	Questionnaire Item #									
	1	2	3	4	5	6	7	8	9	10
1	1	1	1	1	1	1	1	2	1	1
2	1	1	1	1	1	1	2	2	1	1
3	1	1	1	2	1	1	1	1	1	1
4	1	1	1	1	1	1	1	1	1	1
5	1	1	1	1	1	1	1	2	1	1
6	1	2	1	1	1	1	1	2	1	1

Pilot Test

The pilot test was conducted among fifteen students from the designer's second grade class. The target population consisted of seven females and eight males. The group included four students

considered below average, seven average students, and four students considered above average. All students possessed the necessary prerequisite skills.

The lessons were executed as stated in the implementation section with minor revisions made to the materials deemed necessary from the one-on-one and small group evaluations. During the course of the discussion regarding unsafe substances, the students enthusiastically offered their experiences and perceptions. One learner made reference to and inquired about the illegal substance, "crack." Although illegal drugs were not the direct focus of the lesson, the designer felt it was important to address the immediate concerns of the students. Since the designer researched fact sheets about various dangerous illegal substances, the instructor was prepared to discuss the health hazards involved with the use of "crack." These fact sheets were obtained from the Suffolk County Department of Health Services (1988).

The designer observed that the students progressed through the materials at approximately the same pace as in the small group evaluation, with a minimum of individualized detailed instruction. The small group and pilot test group received less interaction from the instructor during each session. More peer interaction and cooperative learning were observed in these learning situations.

Each question from the tests was read aloud and the students followed along from their desks. The results of the pretest and post test are summarized on Table 10. The students eagerly offered their reaction to the lessons following the post test. The vast majority of the students enjoyed the experiment presented during

Table 10

Results of the Pretest and Post Test for the Pilot Test Evaluation

Student	Pretest Score %	Pretest Raw Score	Post Test Score %	Post Test Raw Score
1	45	9 of 20	90	18 of 20
2	60	12 of 20	95	19 of 20
3	50	10 of 20	80	16 of 20
4	50	10 of 20	100	20 of 20
5	55	11 of 20	90	18 of 20
6	50	10 of 20	85	17 of 20
7	55	11 of 20	95	19 of 20
8	65	13 of 20	95	19 of 20
9	60	12 of 20	90	18 of 20
10	50	10 of 20	100	20 of 20
11	45	9 of 20	85	17 of 20
12	45	9 of 20	100	20 of 20
13	65	13 of 20	100	20 of 20
14	50	10 of 20	100	20 of 20
15	65	13 of 20	100	20 of 20
Mean	54		94	

lesson three. The remaining students stated that they enjoyed the filmstrip or problem solving activities best. The pilot test further confirmed the value and success of the lesson. The results of the attitude questionnaire indicated that the students enjoyed the lesson and the materials contained therein. Table 11 shows the results of the questionnaire. Number one indicates a yes response.

Number two indicates a no response.

Table 11

Pilot Test Questionnaire Results

Student	Questionnaire Item #									
	1	2	3	4	5	6	7	8	9	10
1	1	1	1	1	1	1	2	2	1	1
2	1	1	1	1	1	1	2	2	1	1
3	1	1	1	1	1	1	1	2	2	2
4	1	1	1	1	1	1	2	2	1	1
5	1	1	1	1	1	1	2	2	1	1
6	1	1	1	1	1	1	1	2	1	1
7	1	1	1	2	1	1	2	2	1	1
8	1	2	1	1	1	1	2	2	1	1
9	1	1	1	1	1	1	2	2	1	1
10	1	1	1	1	1	1	2	2	1	1
11	1	2	1	1	1	1	1	2	1	1
12	1	1	1	1	1	1	2	2	1	1
13	1	1	1	1	2	1	2	2	1	1
14	1	1	1	1	1	1	2	1	1	1
15	1	1	1	2	2	1	2	2	1	1

Summative Evaluation

The results of the pilot test substantiated the value of both the instruction and materials used. The structure of the instruction allowed for active participation on the part of the students. The presentation elicited the students' opinions and perceptions, while the materials offered new information on the topic. The use of multi-media also served to maintain the level of interest of the students.

The summative evaluation encompassed the collection of information in determining the effectiveness and feasibility of instruction. The four levels of summative evaluation as described by Kirpatrick (1987) are: reaction, learning, behavior, and

results/impact. The designer conducted reviews at all three levels.

Reaction

Initial receptivity by the students was the basis for a good atmosphere for learning. In order to assess the relative reaction of the students to the subject matter and materials, an attitude questionnaire was developed. The questionnaire is located in Appendix H. The questionnaire queried the students' reactions to the materials and methodology presented. The results of the questionnaire overwhelmingly confirmed the method or approach of the instruction as well as the materials used. This could be attributed to the structure of the instruction and the use of the multimedia which heightened the interest and level of involvement on the part of the students.

Learning

The purpose of evaluation at this level measured the learning of principles, facts, techniques and skills introduced in the instruction. In order to evaluate what the students learned through instruction, a pretest and post test was given. The written tests were a combination of multiple-choice and fill in the blank questions. These tests provided the opportunity to assess objectivity and precision as well as being easy to administer. By giving the same test prior to and after instruction, the designer was able to measure the actual gains made through instruction. With a predetermined cut-off score of eighty percent, it was relatively easy to measure and analyze the students' knowledge of the material presented. The results of the test substantiated the level of attainment. A mean score of ninety-four percent on the

post test also supports learning gained.

Behavior

Evaluation at this level determined whether the students changed their behavior as a result of what was learned.

In order to evaluate this level a behavior checklist was developed and completed. The behavior checklist can be found in Appendix J. The intent of the checklist was to record the presence, absence, frequency, duration, and change in the student's behavior. Completed by the instructor, the checklist attempts to identify what behaviors should or should not occur.

During subsequent discussions, the students voiced their intentions and plans to practice extra caution when dealing with any substance. During these discussions some students appeared to have extensive knowledge of illicit drugs as well as normal household substances. On several occasions, the students revealed that they would use the same cautions with illicit drugs as with household substances. Extensive discussion of illicit drugs was not the primary focus of this instruction. While the frequent inquiries concerning illicit substances were not ignored, it provided additional insight to the discussions in the unit.

The results of the behavior checklist substantiated that the students had successfully transferred the desired behavior to other related situations. Table 12 summarizes the result of the behavior checklist. Number one indicates that the student displayed appropriate behavior. Number two reveals the student's inability to complete the given task.

Table 12

Behavior Checklist Results

Student #	Checklist Items									
	1	2	3	4	5	6	7	8	9	10
1	1	1	1	1	1	1	1	1	1	1
2	1	1	1	1	1	1	1	1	1	1
3	1	1	1	1	1	1	1	1	1	1
4	2	1	1	1	1	1	1	1	1	1
5	2	1	1	1	1	1	1	1	1	2
6	1	1	1	1	1	1	1	1	1	1
7	1	1	1	1	1	1	1	1	1	1
8	1	2	1	1	1	1	1	1	1	1
9	1	1	1	1	1	1	1	1	1	1
10	1	1	1	1	1	1	1	1	1	1
11	2	2	1	1	1	1	1	1	1	1
12	1	1	1	1	1	1	1	1	1	2
13	2	2	1	1	1	1	1	1	1	1
14	1	1	1	1	1	1	1	1	1	1
15	1	1	1	1	1	1	1	1	1	1

Results/Impact

Evaluation at this level was used to determine the results of the instruction and the long-term effect of the student's behavior. The overall effect on the behavior of the students can only be determined by assessing the behavior patterns of the students over a long period of time. However, assessing the changes in attitudes towards the material presented is a way of projecting long-term results. Following instruction, students mentioned how certain hazardous materials are currently being handled at home. There were significant changes in the attitudes regarding the materials presented. The benefit of instruction of this type would probably yield even further positive long-term changes if it is part of a sequential drug prevention program which reinforces the desired behavior on the topic.

Learning Transfer

The transfer of learning relates to the relevancy of the training or learning situation to the daily environment. Effective learning transfer occurs when the learner can apply newly acquired skills to normal routine. Broad (1982) cites actions that can be taken by management to support the transfer of learning. They include: management and supervisory involvement, pre-instruction preparation, support during instruction, job linkage, and follow-up. The designer reviewed the instructional unit based on the interpretation of Broad's (1982) techniques as they apply to classroom instruction.

School Administration Involvement

School administration involvement relates to the actions taken by those at a policy-making level to the support of the full use of learning from a specific training program. This encompassed actions such as the naming of appropriate personnel to the design of the program, participation in program preview, participation in advance briefing of program, and others.

Prior to the design of the instructional unit the designer discussed the overall program's intent with the second grade chairperson. Once the program was ready for presentation in the one-on-one evaluation, the designer conferred with the grade chairperson on the review of materials. This review resulted in the revision of the length of each session from one hour to forty minutes. Another suggestion resulting the review was the letter to parents advising them of the substance awareness instructional unit. The letter served as a advance notice or briefing on the topic area.

Pre-instructional Preparation

Pre-instructional preparation encompassed the actions taken by administrators and teachers of learners before the instruction begins. Actions taken as part of this activity included but were not limited to: assessment of instructional needs, development of instructional objectives for training, design of training program, addressing post-training performance expectations, and others.

The designer, developed the instructional goal after acknowledging the perceived need for instruction. Following the establishment of the need, the designer proceeded with the design and development of the instructional unit. As part of the design, the designer established acceptable student/participant performance levels.

Support During Instruction

Support during instruction included the actions taken by administrators and teachers to maintain the relationship between students and other activities during the instructional period. This usually involves actions that free the learner to concentrate on instruction without demands for attention regarding other topic areas. This allows the learner to be fully focused on the content without interruptions. For this project, the designer allotted the appropriate amount of time for instruction without interruption.

Linkage

Linkage encompassed those actions relating to the entry or reentry of the learner to the daily learning situation. Such actions as setting new goals of performance and practicing ways to reinforce newly learned behavior are examples of relating the

learning to the learning environment. Students were expected to exhibit newly acquired skills during instruction, as well as retain those skills for use in their every day life. A letter was sent to the parents of each learner asking for their support in reinforcing daily activities. This letter provided a vital link between classroom activity and parental involvement.

Follow-up

Follow-up covered the administrators' and teachers' actions which provide ongoing reinforcement of the new behaviors acquired during the learning situation. Actions such as learning related decisions based on new learning, giving positive reinforcement for desired learner performance, are examples of follow-up activities.

The designer developed a behavior checklist as a means of determining a change in student behavior. This checklist recorded the presence, absence, and frequency of the changes in behavior. In addition, the instructor intended to make continued reference to the basic objectives and acquired skills from the instructional unit while conducting lessons in other topic areas. Follow-up activities as outlined in Chapter 4 were used. Such references would be made during lessons in such topic areas as health, social studies, and science. This approach will help to reinforce and expand on newly acquired behavior.

Summary

The designer conducted both formative and summative evaluations. During the formative evaluation, one-on-one trials were conducted three times; a small group evaluation involved six students; and a pilot test implementation involved fifteen

students. During the formative evaluation, data concerning the learning materials was collected and used to enhance the effectiveness of the materials and presentation. The changes included the reduction in the length of each class session and minor revisions to the wording of some post test questions for clarity. The results of the post test and attitude questionnaire were compiled and assessed.

The summative evaluation was conducted based on Kirkpatrick's four levels: reaction, learning, behavior, and results. During the summative evaluation, data was compiled about the instruction for the purpose of assessing its value to the target population. The instruction was presented in an interactive manner with instructor leading and directing the course of the lessons. The post test and attitude questionnaire as well as the behavior checklist were also compiled during this stage. However, the focus was on the value of instruction as opposed to the revision of materials.

The instructional unit was also assessed as to how the instruction and materials related to the environment of the target population.

CHAPTER 7

SUMMARY AND RECOMMENDATIONS

Introduction

This chapter provides a summary of the instructional unit described in this project. It details what actually took place during the design and implementation of the instructional unit. A review and analysis of the unit's methodology and approach are also presented in this chapter. Conclusions and recommendations that may be of benefit to other designers in expanding on this topic are also presented.

Methods and Procedures Used

The design of this instructional unit was based on the instructional systems design (ISD) Model. The five stages of this approach used in the unit's development were: analysis, design, development, implementation, and evaluation.

Analysis

The designer conducted a needs assessment, job task assessment, and target population assessment during the analysis stage. The instructional goal was identified based on the perceived need to create a substance awareness unit at the second grade level. Additionally, the unit was intended to focus on the building self-esteem and confidence in the students in the target population. The need for the instructional unit was supported by the fact that the only existing related course, at the second grade level, was intermittent health presentations. The results of personal interviews with colleagues, administrators, and support

service staff substantiated this need.

The target population was second grade students in a low socio-economic school district. The study of this population was conducted using data from the children's academic records, personal observations of the students and the community, interviews with parents, and student responses to a questionnaire. The results of the questionnaire substantiated the need for instruction.

Five main tasks were identified as necessary in order to achieve the instructional goal. The instructional goal was designed to enable students to distinguishing between safe and dangerous substances as well as demonstrate the ability to make sound choices regarding substance usage. The main tasks were further subdivided into the number of steps required to complete the main task.

Literature and materials were gathered and reviewed to determine if they were appropriate for inclusion into the unit. A multimedia/method approach was used. Media and materials that met the needs of the instructional objectives and the needs of the target population were used.

A major events list and time line was developed by the designer at the beginning of the project which commenced on September 12, 1988, and concluded May 22, 1989. In an effort to avoid time conflicts and interruptions, Gantt and PERT charts were also developed.

The last part of the analysis stage involved the preparation of a budget for the instructional unit. Cost of implementing the instructional unit was considered reasonable.

Design

In the design stage, five instructional objectives were identified that corresponded with the five main tasks required to distinguish safe versus dangerous substances. Additionally, five entry level behaviors were defined. The main tasks and subskills were grouped in a learning hierarchy. Instructional objectives were placed in a logical sequence to provide an orderly transition from one lesson to another.

Lesson plans with method and media selection following Gagne's nine internal processes were prepared. Time estimates for each lesson was established. Each of the five lessons was forty minutes.

During this stage, test items were developed. The assessment used for the instructional unit included a pretest and post test.

Formative and summative evaluations were used by the designer. The evaluation included a post-learning questionnaire as well as a behavior checklist. Additionally, considerations were made to facilitate the transfer of learning. The transfer of learning was to be accomplished through the systematic reinforcement of acquired skills.

Development

The development of the instructional strategy was accomplished as outlined by Dick and Carey (1985) and Gagne (1985). Approximately twenty percent of the instructional activity package was reviewed by the second grade chairperson and other colleagues prior to the presentation to any students. One suggestion was made and included into the instructional unit.

Particular attention was made to vary the method of

presentation in order to heighten the motivation of the target population. The pretest, post test, post-learning attitude questionnaire, and behavior checklist were prepared as well as a reward certificate for successful completion of the instructional unit.

The final version of the instructional learning package was reviewed for content and accuracy by the grade chairperson. Prior to the review the designer scanned the unit for grade level appropriateness. A letter to parents informing them of the instructional unit and its objectives was added to the design. Twenty-five copies of the unit's activity sheets were produced.

Implementation

The formative evaluation was conducted at the end of the development stage. The results of this evaluation were minor revisions to individual lessons and wording of the pretest and post test. The revised methods and materials were utilized during the actual implementation to the target population. Fifteen copies of the appropriate activity sheets were produced and completed by the students according to the lesson plans. Implementation was conducted over a five-day period commencing April 3, 1989.

The design of the instructional unit utilized a varied media selection with a great deal of instructor interaction. The unit's lessons were augmented with discussion and individual work. Careful attention was directed towards creating a risk-free environment in which the students could speak candidly and without feeling pressured. Positive reinforcement was provided frequently to encourage self-confidence and self-esteem. Data was also collected during this stage for use in the summative evaluation.

Evaluation

In the development stage the formative evaluation took place with the designer conducting one-on-one, small group evaluations, and a pilot test. Minor revisions were made to the materials with results compiled from the one-on-one and small group evaluations. The summative evaluation involved the four steps of reaction, learning, behavior, and results. Test results were compiled and changes in behavior assessed from a post learning attitude questionnaire and behavior checklist. Based on the results of the evaluations, post-learning attitude questionnaire and behavior checklist, the designer determined that the method and approach of the instruction was effective.

Conclusions

The evaluation of the pilot test and reaction to instruction recorded from the attitude questionnaire reinforced the designer's contention that the instructional unit should be a combination of instructor directed activity, active student participation, and individualized activity. The students responded well to the unit's materials and presentation. The use of a multimedia approach proved to maintain the attention of the students and meet the instructional goal.

At the conclusion of the instructional unit, the students enthusiastically offered their opinions and intentions to practice extra caution when dealing with any substance. This supports the usefulness of the instruction.

Recorded test results indicated growth, in as much as none of the students passed the pretest and all of the students in the

class passed the post test.

As a result of this project, it is hoped that the district considers development of a sequential K-12 substance abuse prevention curriculum based on the ISD model. This model would allow for instruction to be tailored to meet the individual needs of the students in the district.

Recommendations

1. The instructional unit and activity package should be incorporated in a fully developed program on substance prevention. The development of such a program should encompass other disciplines such as reading, science, and social studies.

2. Utilize the services of outside resources such as local police, social service, church, and community to augment instruction.

3. Students must have a sense of direction in dealing with substances and substance related issues. A strong foundation must be set by first providing students with information and decision making skills relevent to their present everyday lives. It is only then can we teach them to comprehend more complex substance related problems such as illegal drug abuse.

4. Activities of such a program should extend beyond the classroom. Parental involvement proved to be an integral link in the success of this instructional unit. Continued parental guidance is essential in the formulation of sound health practices. Parents should be encouraged to actively participate.

5. Instructors should research the topic thoroughly prior to instruction and be prepared to address the students' immediate

concerns.

6. Preaching and scare tactics have been found to be the least effective methods of making significant long-term behavioral changes in children. The instructor should attempt to create an atmosphere in which the children are comfortable to relate their own experiences.

7. If is essential that follow-up activities and reinforcement of the newly learned skills be provided on a regular basis for lasting results.

Concluding Statement

The instructional design described in this project proved to be a worthwhile experience. Progressing through the five stages of the instructional systems design was detailed and took considerable time. The in depth approach of the instructional analysis was invaluable and provided the designer with a greater insight into learning needs and addressing those needs.

With the proliferation of illicit drugs in our society, and the constant temptation facing our youth to use them, it is imperative that young people are provided the proper foundation for sound health practices. This need is particularly acute in minority low socio-economic areas where the use of drugs has more or less become commonplace and accepted as the routine; young children are at higher risk of imitating the patterns.

Early prevention is the most promising hope for the future success of alleviating the substance abuse problem. It is the obligation of the schools to make a difference in the lives of these young children. Federal, state, and local government must

join forces with administrators, educators, community agencies, and parents to provide young children with the maximum defense against possible substance misusage. Prevention efforts for young children must focus on the basic life skills and providing understanding on how to respect their bodies and keep healthy.

This instructional unit takes this into consideration and the discipline of the analysis approach was instrumental in designing a series of activities that met the goal for the target population. This is a first step in initiating hope for the "at-risk" students in this community. The designer offers this project to anyone interested in expanding the topic through the use of the Instructional Systems Design process.

APPENDIX A

STAFF INTERVIEW QUESTIONNAIRE

Interview Questions
October 1, 1988

Wyandanch Public School
Title_____

1. Does drug usage and abuse pose a threat to the education of the students in this district?

   a. How?

   b. To what extent?

2. Do you feel that there is a need for a substance abuse prevention program in grade levels K-3?

   a. If so, where does it fit into the curriculum?
   b. Who should teach it?
   c. Presently, does this district provide adequate training on substance usage for its students?

3. What elements are essential to an effective school based substance prevention program in this district?

4. What areas do you feel are most critical for primary grades K-3?

   a. Are there any additional skills, knowledge, and practices that you feel the students in this community need? Why?

5. In order of most importance, name three areas of concentration that you feel should be stressed on your grade level?

APPENDIX B

INSTRUCTIONAL TASK ANALYSIS

Substance Awareness
Task Analysis Chart

1.0 Define substance related terms
- 1.1 Define the word drug
- 1.2 Define the word substance
- 1.3 Define the term safe substance
- 1.4 Define the term dangerous substance
- 1.5 Define the word judgement
- 1.6 Define the word poison
- 1.7 Define the word caution
- 1.8 Define the word alcohol
- 1.9 Define the word consequence

2.0 Recognize that substances can be used safely
- 2.1 Define medicine
- 2.2 Identify safe substances
- 2.3 List safe substances
- 2.4 describe how substances can be used safely
- 2.5 Explain health benefit of safe use of substances

3.0 Recognize that substances can be used dangerously
- 3.1 Identify dangerous household substances
- 3.2 List dangerous substances
- 3.3 Recognize the word warning
- 3.4 Recognize the word poison
- 3.5. Recognize the word caution
- 3.6 Recognize warning labels on dangerous substances
- 3.7 Explain consequences of dangerous substance usage

4.0 State rules for safe substance usage
- 4.1 State rules for safe use of medicine
- 4.2 State rules for use of substances with warning labels
- 4.3 State rules for use of unknown substances

5.0 Choose to use substances safely
- 5.1 Categorize safe and dangerous substances
- 5.2 Decide action to take when confronted with choices regarding substance usage
- 5.3 Identify a problem in a given situation
- 5.4 Identify consequences resulting from a choice
- 5.5 State solution confidently
- 5.6 Volunteer answers
- 5.7 Support decision with factual information

APPENDIX C

STUDENT QUESTIONNAIRE

Responses to Student Questionnaire

		yes	no
A.	Exposure to or Personal Experience with Substances		
	Exposed to cigarette smoke in their home	18	7
	Believe that cigarette smoking is harmful	10	15
	Tried cigarette smoking at least once	1	24
	Exposed to alcoholic beverages in their home	20	5
	Believe that drinking alcohol can be harmful	6	19
	Tried alcoholic beverages at least once	5	20
	Exposed to drug use in the home (illicit drugs)	10	15
	Believe that drug use is harmful	13	12
	Tried drugs at least once	0	25
B.	Health related routines		
	Established bed time	6	19
	Routinely eat breakfast at home before school	14	11
	Take vitamins daily	8	17
	Take medicines at least once a week	2	23
	Rules for substance use in home	10	15

APPENDIX D

A SUMMARY OF PIAGET'S STAGES OF DEVELOPMENT

The four stages of development and their characteristics are as follows:

Sensorimotor Stage

This period spans the years from birth through two years old. The child is in the preverbal stage. Their actions are governed by sensations. Through their senses and motor activity, the child acquires practical knowledge about the world. It is during this period that a youngster gains object permanency, and reactions are based on the physical characteristics of the stimuli.

In order to enhance learning adult activity should include stimulating the senses through objects the child can interact with and manipulate. Objects such as mobiles, rattles, toys of various shapes, textures and colors can stimulate the learning process. Additionally, opportunities should be provided for children to apply old skills to new experiences as well as provide peer contact and interaction.

Preoperational Stage

The preoperational stage, spanning years two to seven, covers a period of expansive growth and change. This stage is made up of two sub-stages; preconceptual (approximately two through four years), and intuitive (approximately four through seven years).

In the preconceptual period language emerges as the main system of representation. Piaget's theory suggests that children at this stage learn primarily through verbalization with others. Problem solving skills are also broadening. Imaginative play and imitation are greatly increased during this phase.

In the intuitive stage, the child's ability to think logically

remained marked by an inflexible nature. The child's responses or comprehension of a situation is based on a single perceptual aspect of the stimulus. This trait is referred to by Piaget as centration. The child frequently relies on intuition and is strongly influenced by sight. They have little concept of time such as a week, month, year. Another characteristic of this stage is what Piaget describes as egocentrism. Egocentrism distorts the child's ability to understand an approach other than their own. They believe that everyone has the same thoughts, experiences, and actions.

In order to enhance learning, communication with the child should be on his level or above. The child should also be provided with as many informal learning experiences a possible. Encouragement of decision making skills is important.

Concrete Operational

The concrete operational stage spans the years seven through eleven years old. In this stage logical thinking and the reasoning process becomes more evident in relation to physical objects. The deductive reasoning process and classification of objects while being handled or manipulated are within the scope of the child. Logical rules can be applied to arrive at conclusions, however, the child is not consciously aware of these rules. It is difficult for a child in this stage to apply rules to objects or situations that are unfamiliar. Children in the concrete operational stage are capable of reversibility. In addition, the child is increasingly aware of the feelings of others.

Opportunities should be provided for the child to pursue areas of interest. Decision making and problem solving using physical

objects and familiar situations should be encouraged.

Formal Operational

The final stage of Piaget's development theory is formal operational (eleven years through adulthood). In this stage, children are capable of adult abstract and reasoning. They can reason without the use of concrete materials and can employ systematic logical thought. It is at this stage that hypothesis can be developed and viewpoints supported. Although formal operation is the ultimate stage of Piaget's continuum, it is the only stage that is not necessarily completely achieved by all people.

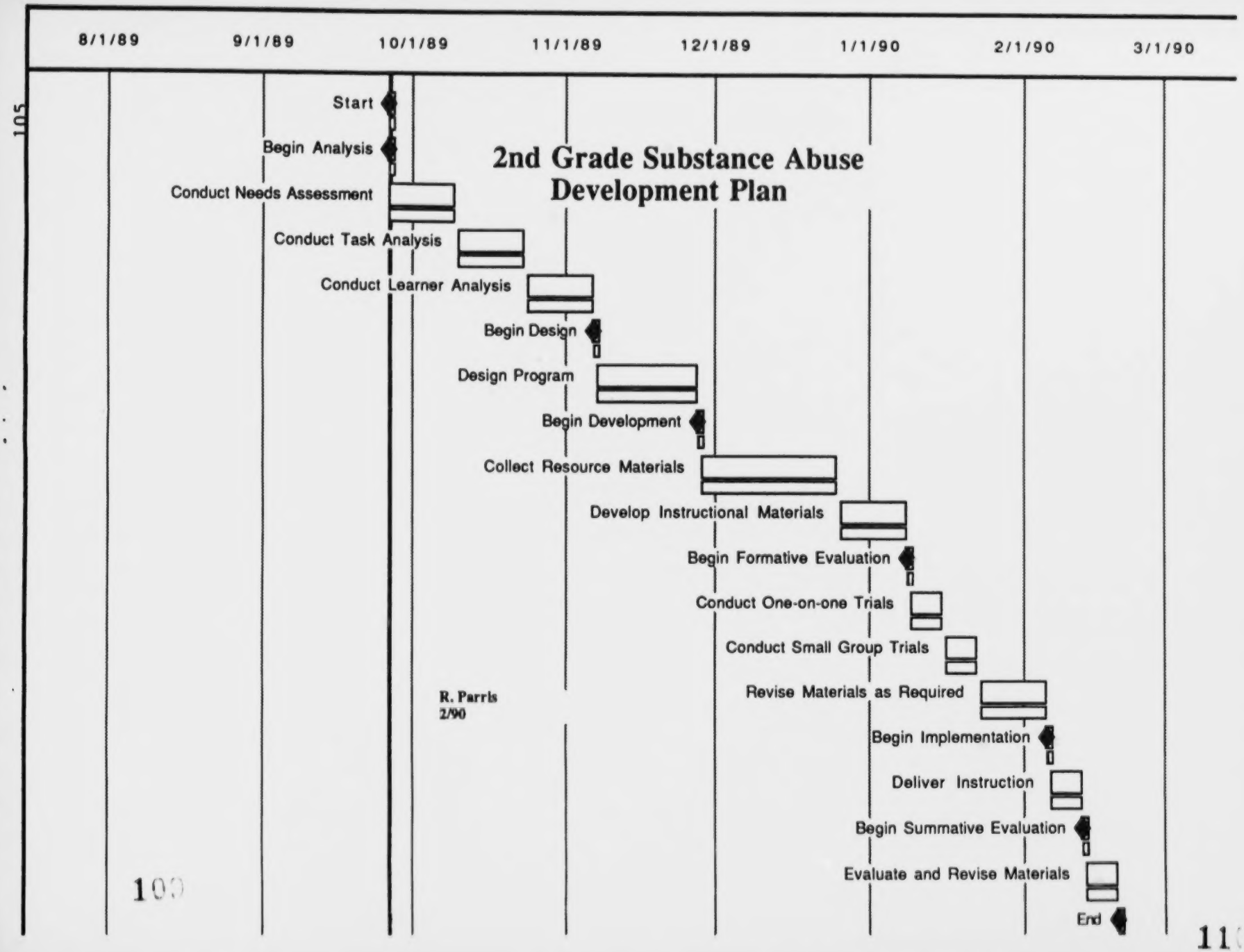
At this stage, children should be challenged with hypothetical problems to solve and encouraged to make personal decisions.

APPENDIX E

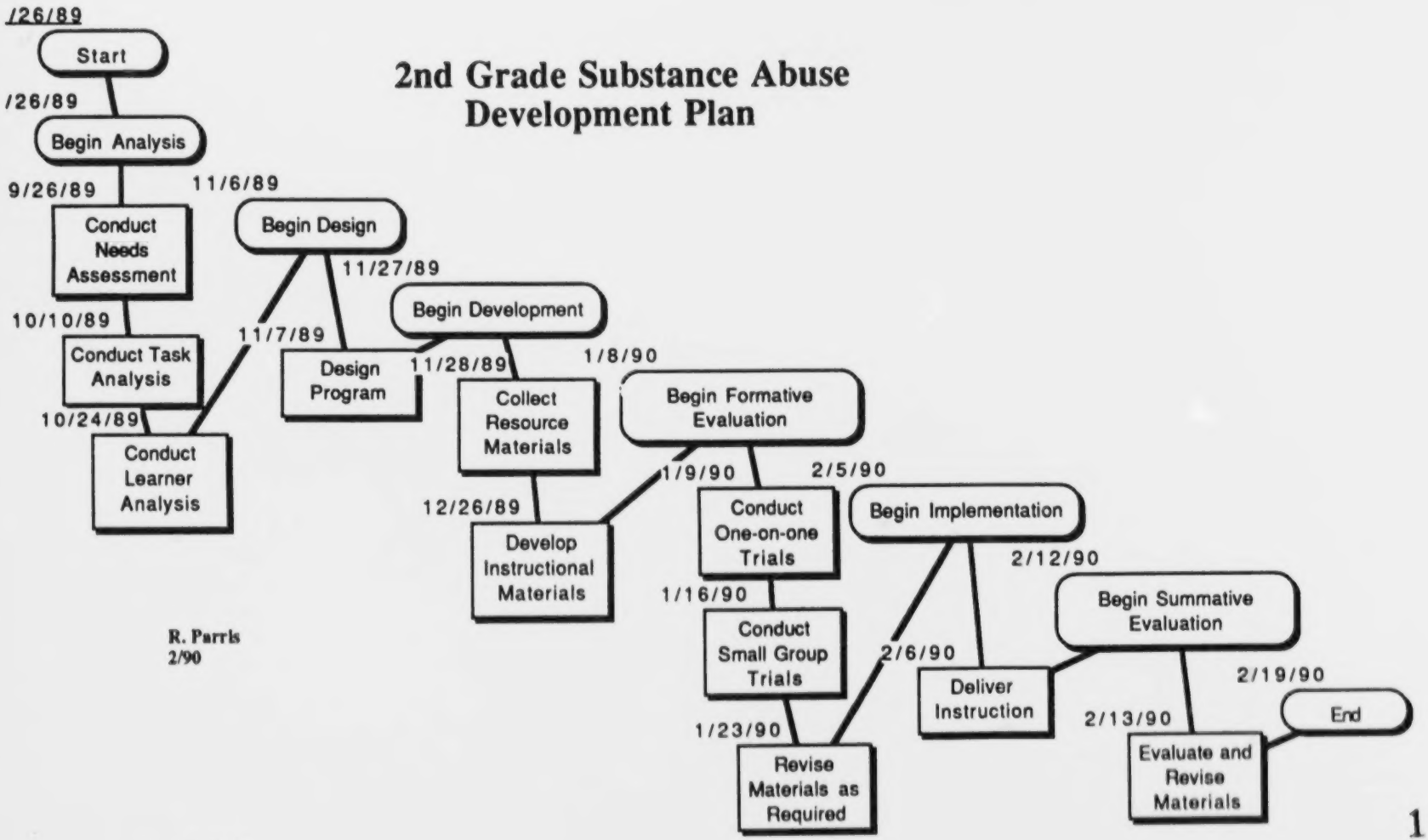
PROJECT PLANNING

Major Events List and Time Line

	STEPS	NO. OF WKS.	START DATE	END DATE
1.	Needs Assessment	2 weeks	09/26/88	10/07/88
2.	Instructional Task Analysis	2 weeks	10/10/88	10/21/88
3.	Learner Analysis	2 weeks	10/10/88	10/21/88
4.	Program Design	3 weeks	10/24/88	11/11/88
5.	Collect Resource Data	4 weeks	11/14/88	12/09/88
6.	Develop Learning Package	2 weeks	02/27/89	03/10/89
7.	Conduct One-On-One	1 week	03/13/89	03/17/89
8.	Conduct Small Group	1 week	03/20/89	03/24/89
9.	Conduct Pilot Test	1 week	04/03/89	04/07/89
10.	Process Results of Evaluation	2 weeks	04/24/89	05/05/89
11.	Conduct Summative Evaluation Ending Date	2 weeks	05/19/89	05/19/89


8/1/89
9/1/89
10/1/89
11/1/89
12/1/89
1/1/90
2/1/90
3/1/90
2nd Grade Substance Abuse
Development Plan
Start
Begin Analysis
Conduct Needs Assessment
Conduct Task Analysis
Conduct Learner Analysis
Begin Design
Design Program
Begin Development
Collect Resource Materials
Develop Instructional Materials
Begin Formative Evaluation
Conduct One-on-one Trials
Conduct Small Group Trials
Revise Materials as Required
Begin Implementation
Deliver Instruction
Begin Summative Evaluation
Evaluate and Revise Materials
End
R. Parris
2/90

2nd Grade Substance Abuse Development Plan



R. Parris
2/90

APPENDIX F

PRETEST

Name_____ **Date** _____

Pretest

Directions: **Fill in the circle above the word(s) that correctly completes each sentence.**

1. When a substance could cause harm to the body it is _____.

   nutritious safe dangerous

2. Alcohol is a _____.

   treat pill drug

3. Wine contains the substance _____.

   caffeine nicotine alcohol

4. Poisons can _____ the body.

   help harm hide

5. _____ contains the drug nicotine.

   alcohol coffee cigarettes

6. _____ are sometimes placed on substances to alert us to danger.

   yellow lights warning labels large letters

7. _____ are used to give needed minerals to the body.

   medicines vitamins drugs

8. The word _____ is sometimes used on substances that are harmful.

stop go caution

9. You can safely take medicine when _____.

you want some it looks like it taste good you are sick

10. _____ can safely give you medicine.

parents friends strangers

11. Substances without labels should be_____.

tasted before used smelled before used thrown away

12. Medicines and other dangerous substances should be kept _____.

in the bathroom in the kitchen out of the reach of children

13. The first thing that is affected by drinking alcohol is _____.

breathing judgement voice

14. Cigarette smoking can cause _____.

tooth decay happiness cancer

Directions: In your own words, fill in the answers.

15. Name three harmful household substances.

1. _____

2. _____

3. _____

16. Name three words that are sometimes shown on poisons to alert us to danger.

1. _____

2. _____

3. _____

17. Name three parts of the body that are affected by cigarette smoking.

1. _____

2. _____

3. _____

18. Write one rule to follow for safe substance use.

_____

_____

_____

19. Write two sentences that will help you say no to using substances that are dangerous.

1. No, _____

2. No, _____

20. You are playing at a friends house. Your friend asks you to try smoking a cigarette. Would you_____?

do it with your friend to try it

take only one puff to satisfy your friend

tell your friend "NO", it might make you sick

APPENDIX G

POST TEST

Name_____ Date _____

Post Test

Directions: Fill in the circle above the word(s) that correctly completes each sentence.

1. When a substance could cause harm to the body it is _____.

   nutritious safe dangerous

2. Alcohol is a _____.

   treat pill drug

3. Wine contains the substance _____.

   caffeine nicotine alcohol

4. Poisons can _____ the body.

   help harm hide

5. _____ contains the drug nicotine.

   alcohol coffee cigarettes

6. _____ are sometimes placed on substances to alert us to danger.

   yellow lights warning labels large letters

7. _____ are used to give needed minerals to the body.

   medicines vitamins drugs

8. The word _____ is sometimes used on substances that are harmful.

stop | go | caution

9. You can safely take medicine when _____.

you want some | it looks like it taste good | you are sick

10. _____ can safely give you medicine.

parents | friends | strangers

11. Substances without labels should be_____.

tasted before used | smelled before used | thrown away

12. Medicines and other dangerous substances should be kept _____.

in the bathroom | in the kitchen | out of the reach of children

13. The first thing that is affected by drinking alcohol is _____.

breathing | judgement | voice

14. Cigarette smoking can cause _____.

tooth decay | happiness | cancer

Directions: In your own words, fill in the answers.

15. Name three harmful household substances.

1. _____

2. _____

3. _____

16. Name three words that are sometimes shown on poisons to alert us to danger.

1. _____

2. _____

3. _____

17. Name three parts of the body that are affected by cigarette smoking.

1. _____

2. _____

3. _____

18. Write one rule to follow for safe substance use.

_____

_____

_____

19. Write two sentences that will help you say no to using substances that are dangerous.

1. No, _____

2. No, _____

20. You are playing at a friends house. Your friend asks you to try smoking a cigarette. Would you_____?

do it with your friend to try it

take only one puff to satisfy your friend

tell your friend "NO", it might make you sick

APPENDIX H

POST-LEARNING QUESTIONNAIRE

ATTITUDE QUESTIONNAIRE

DIRECTIONS: Put an X in front of the answer that best describes how you feel about each of the questions below.

Questions		Yes	No
1)	Did you enjoy the filmstrip?	____	____
2)	Did you learn something helpful from the filmstrip?	____	____
3)	Were the experiments helpful identifying dangerous substances?	____	____
4)	Were the examples included helpful in identifying any new dangerous substances?	____	____
5)	Was the problem solving activities helpful to you?	____	____
6)	Did you learn from other classmates?	____	____
7)	Were the worksheets difficult to understand?	____	____
8)	Were the tests too easy?	____	____
9)	Have you had an opportunity to use the information learned outside of the classroom?	____	____
10)	Have you discussed the information with your parents?	____	____

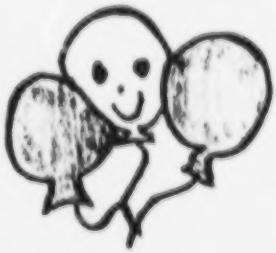
Comments: _____

_____

_____

LEARNING HOW TO USE SUBSTANCES SAFELY

A Learning Activity Package



Name_____ Date _____

Pretest

Directions: Fill in the circle above the word(s) that correctly completes each sentence.

1. When a substance could cause harm to the body it is _____.

o nutritious	o safe	o dangerous

2. Alcohol is a _____.

o treat	o pill	o drug

3. Wine contains the substance _____.

o caffeine	o nicotine	o alcohol

4. Poisons can _____ the body.

o help	o harm	o hide

5. _____ contains the drug nicotine.

o alcohol	o coffee	o cigarettes

6. _____ are sometimes placed on substances to alert us to danger.

o yellow lights	o warning labels	o large letters

7. _____ are used to give needed minerals to the body.

o medicines	o vitamins	o drugs

8. The word _____ is sometimes used on substances that are harmful.

o stop o go o caution

9. You can safely take medicine when _____.

o you want some o it looks like it taste good o you are sick

10. _____ can safely give you medicine.

o parents o friends o strangers

11. Substances without labels should be_____.

o tasted before used o smelled before used o thrown away

12. Medicines and other dangerous substances should be kept _____.

o in the bathroom o in the kitchen o out of the reach of children

13. The first thing that is affected by drinking alcohol is _____.

o breathing o judgement o voice

14. Cigarette smoking can cause _____.

o tooth decay o happiness o cancer

Directions: In your own words, fill in the answers.

15. Name three harmful household substances.

1. _____

2. _____

3. _____

16. Name three words that are sometimes shown on poisons to alert us to danger.

1. _____

2. _____

3. _____

17. Name three parts of the body that are affected by cigarette smoking.

1. _____

2. _____

3. _____

18. Write one rule to follow for safe substance use.

_____

_____

_____

19. Write two sentences that will help you say no to using substances that are dangerous.

1. No, _____

2. No, _____

20. You are playing at a friends house. Your friend asks you to try smoking a cigarette. Would you_____?

O do it with your friend to try it

O take only one puff to satisfy your friend

O tell your friend "NO", it might make you sick

Substance Related Vocabulary

Directions: Vocabulary words and meaning are to be cut out for student use. Have students mix and match definitons to terms.

Drug	Something that changes the way you feel that should be used for cure.
Substance	The material of which anything is made.
Safe Substances	Substances that do not cause harm to the body.
Dangerous Substances	Substances that are likely to cause harm to the body.
Poison	A substance that is dangerous to life if breathed or swallowed.
Caution	A warning to alert you to danger.
Alcohol	A drug found in some beverages.
Nicotine	A drug found in cigarettes.
Judgement	How we think, make choices, and use our brains.
Consequence	Something that happens as a result of a choice.

Date_____

Dear Parents,

Next week your child will begin instruction focusing on substance awareness. We will be covering the following topics:

1. Identifying substance and drug related terms;

2. Identifying substances that if used properly can maintain and protect our health (such as medicine and vitamins);

3. Identifying dangerous substances and their affect on the body (such as cigarettes, alcohol, poisons, and other drugs);

4. Discussing rules for safe use of substances;

5. Practicing problem solving and decision making skills regarding substance usage.

Your active participation is encouraged. Please review the daily activities completed in class, as well as assist your child in completing related homework assignments.

This instruction is intended to help students form the basis for sound health practices as well as enhance decision making skills regarding substance usage.

Working together, we can reach this goal.

Sincerely,

Mrs. Parris
Classroom Teacher

NAME _____ DATE _____

HOMEWORK ASSIGNMENT ONE

DIRECTIONS: Unscramble the letters to make a word listed in the Word Box.

Word Box

Substance	Caution	Judgement
Drug	Safe	Nicotine
Alcohol	Dangerous	Poison
	Consequence	

1). n s o i p o _____

2). e q c n o c u n s e e _____

3). g r u d _____

4). f s e a _____

5). t c u a n i o _____

6). o o h c l a l _____

7). u s d g n a r e o _____

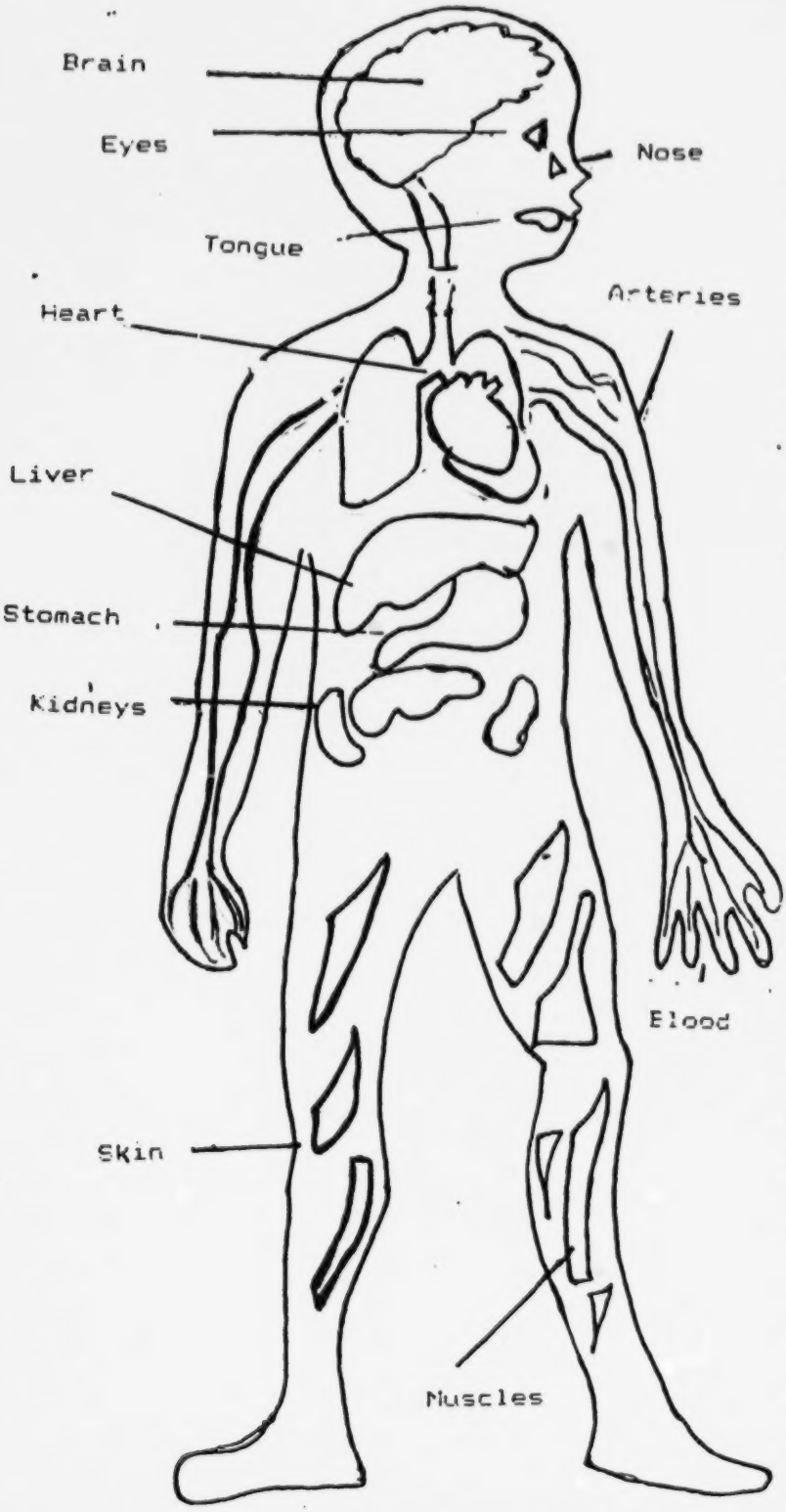
8). m t j d u e g e n _____

9). t n e i c o n i _____

10). t n s b u a s c e _____

* Write each of the words in a sentence.

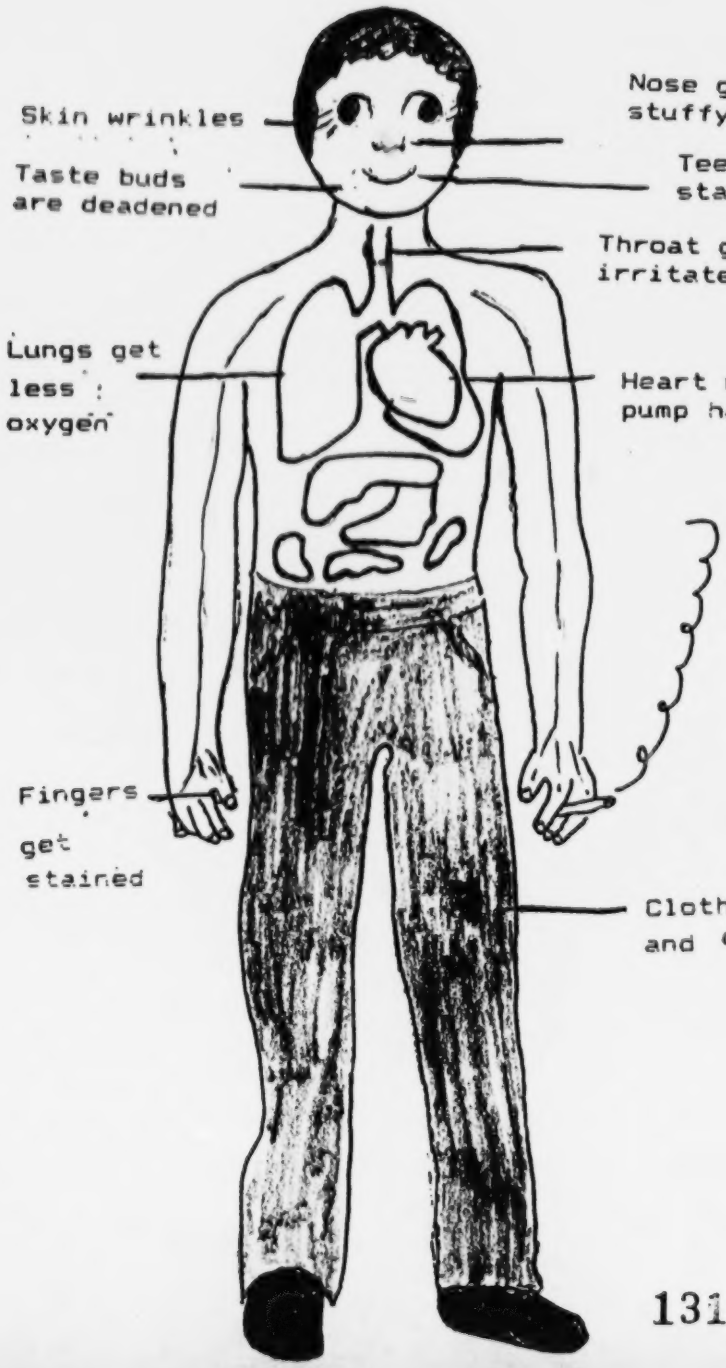
THE FACTS ABOUT ALCOHOL



Alcohol is a drug. It changes the way the body naturally works. Alcohol can be found in many substances, including beer, wine, liquor, and some cough medicines. The part of the body that is most affected by the use of alcohol is your brain. Alcohol harms your judgement. Your judgement is the way you think. It can also hurt many other parts of your body. It can stop the heart from beating and make other body muscles weak. This picture shows all the parts of the body that alcohol can harm. You can protect your health by staying away from drinks that have alcohol in them.

THE FACTS ABOUT SMOKING

CIGARETTES



Cigarette smoking is harmful to your health. It also causes pollution inside and outside the body. Cigarettes are made of brown leaves called tobacco. Tobacco contains the drug nicotine and a substance called tar. These substances can harm your heart, pollute your lungs, and interfere with breathing. This picture shows all the parts of the body that is harmed from smoking. The US Surgeon General says that cigarette smoking is the single major cause of cancer deaths in the United States. You can protect your health by not smoking and by asking those around you not to smoke.

Medicine and Vitamins

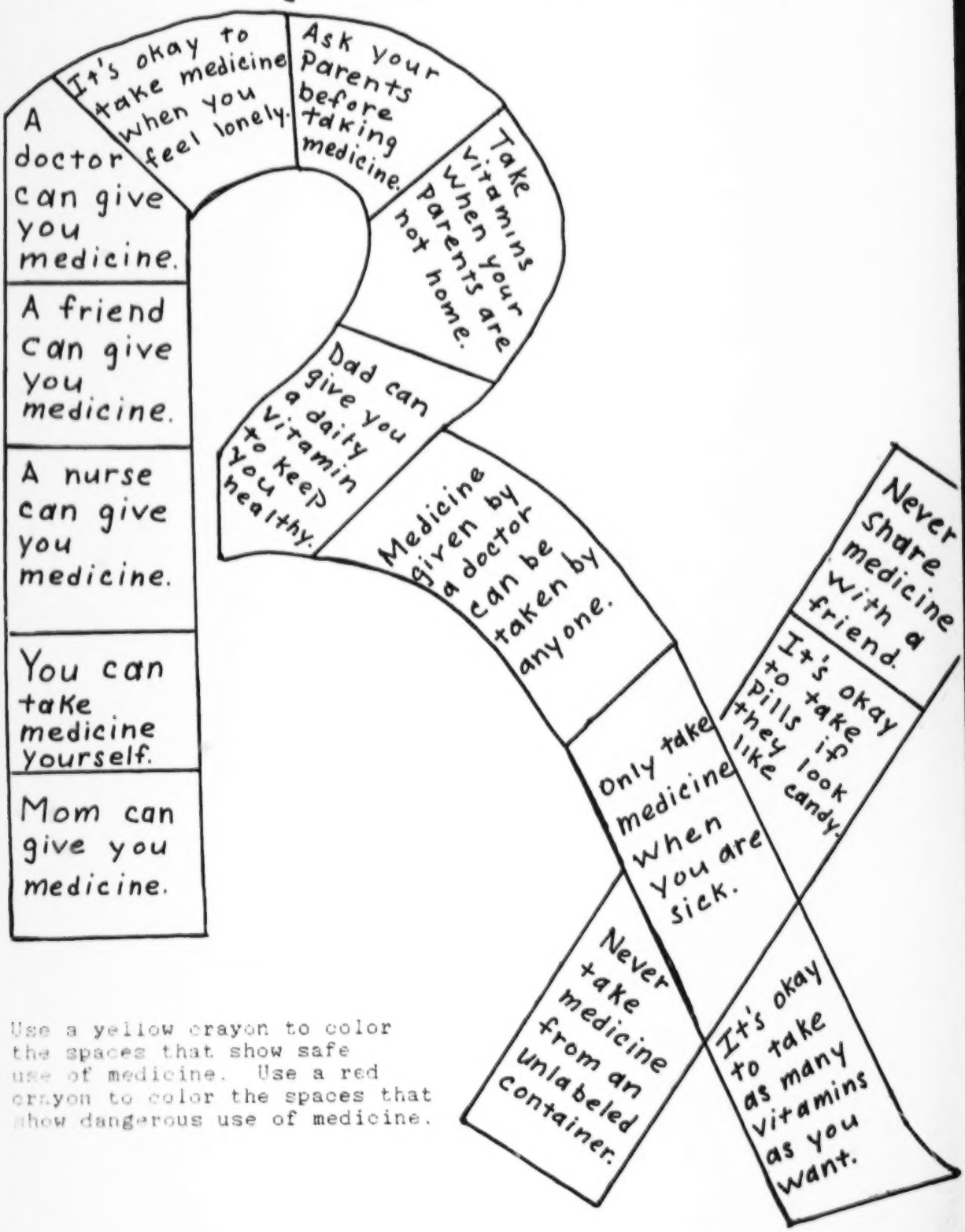
All medicines contain drugs. But when they are used properly, they can help us to feel better when we are sick. They can also prevent us from getting some kinds of diseases. Medicines can be taken in many different ways. They can be taken by swallowing pills, liquid, or by injection. Medicines can also be rubbed into the skin or inhaled through the nose. Medicine should only be taken when people are sick.

Vitamins are in most of the foods we eat. If we ate all the right foods all the time, we would get all the vitamins we need. But sometimes we don't eat the right foods. Then we need to take vitamins from a bottle. Vitamins keep us well if we do not eat right.

Doctors and nurses have special skills that allow them to give medicine and vitamins. Your mother and father can also give you medicine and vitamins when they are needed. Never take any medicines or vitamins by yourself.

You can protect your health by only taking medicine when your are sick. You should always get your parents permission before taking any medicines or vitamins.

Safety Rules for Using Medicine


A doctor can give you medicine.
It's okay to take medicine when you feel lonely.
Ask your parents before taking medicine.
Take vitamins when your parents are not home.
A friend can give you medicine.
Dad can give you a daily vitamin to keep you healthy.
A nurse can give you medicine.
Medicine given by a doctor can be taken by anyone.
Never share medicine with a friend.
It's okay to take pills if they look like candy.
You can take medicine yourself.
Only take medicine when you are sick.
Mom can give you medicine.
Never take medicine from an unlabeled container.
It's okay to take as many vitamins as you want.

Directions: Use a yellow crayon to color the spaces that show safe use of medicine. Use a red crayon to color the spaces that show dangerous use of medicine.

NAME _____ DATE _____

Signs of Danger

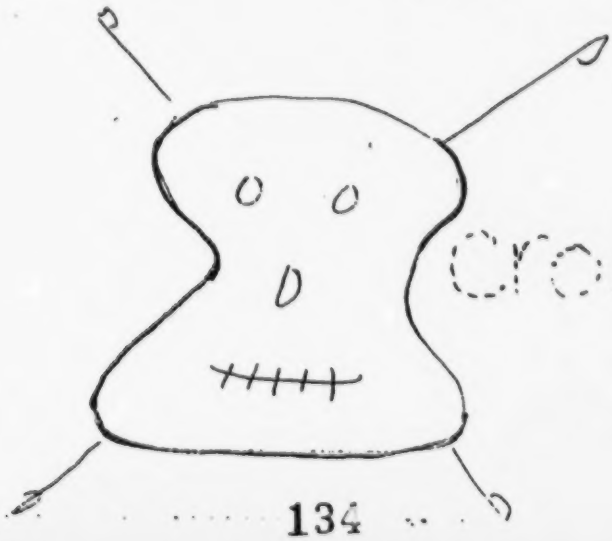
Directions: Say and trace each word below. These words are often used on labels to help us to know that they could be dangerous.

Caution

Danger

Warning

beware



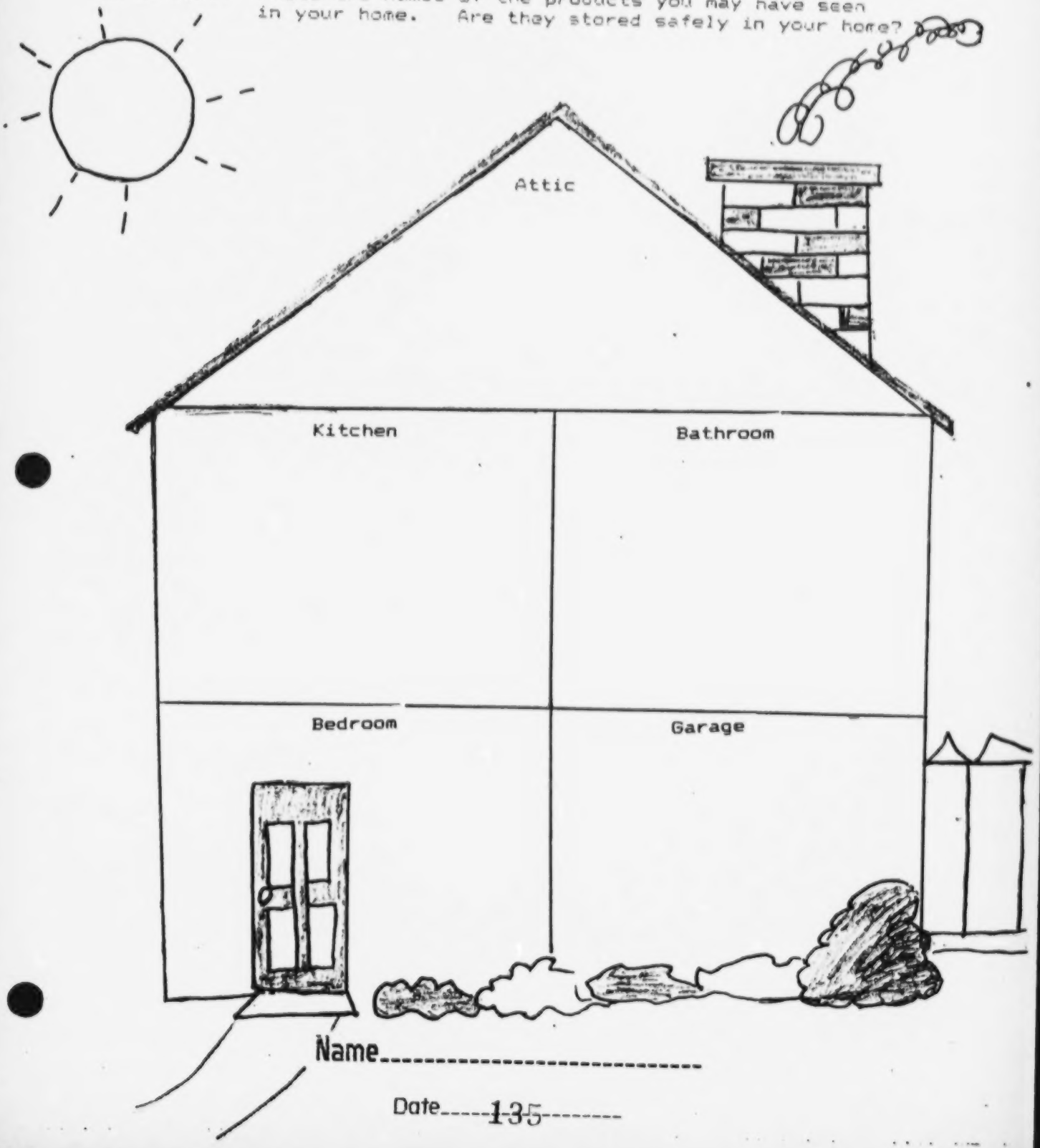
skull

crossbone

Dangerous Substances

That Can Be Found In your Home

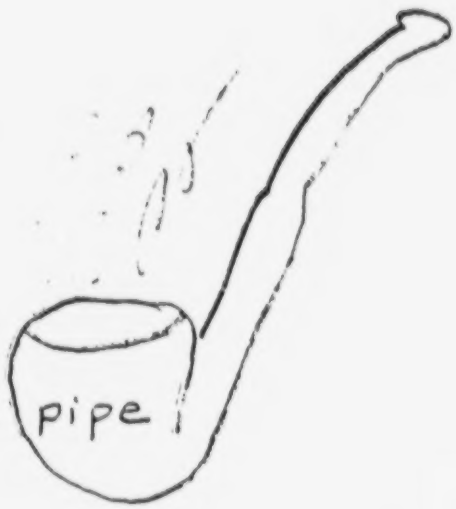
Directions: Write the names of the products you may have seen in your home. Are they stored safely in your home?

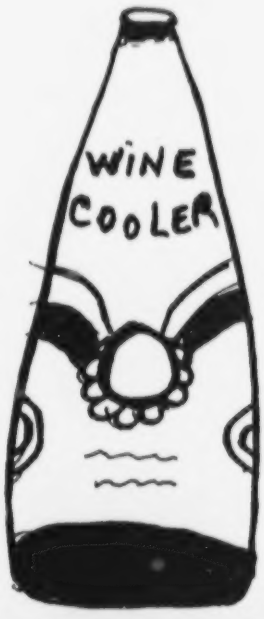


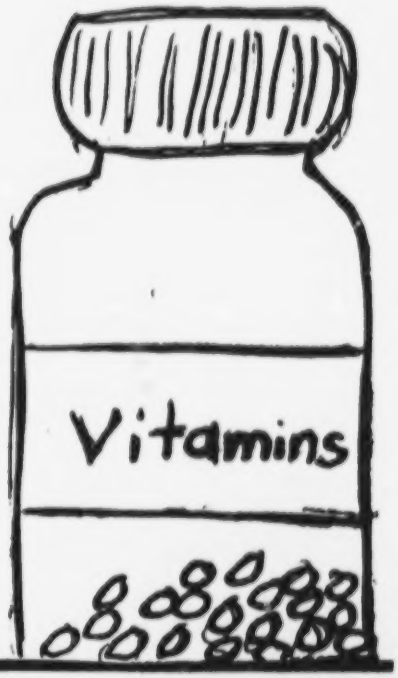
Name_____

Date_____

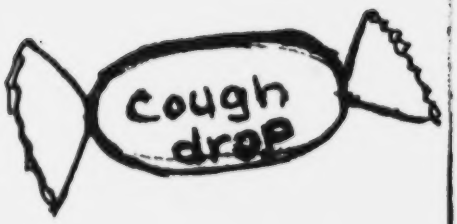
Teacher Activity Cards





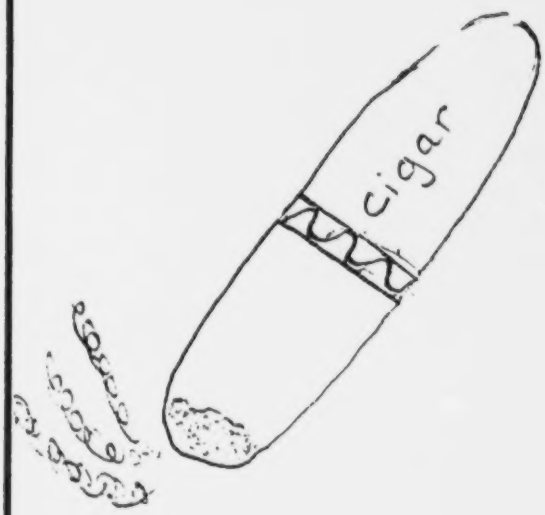


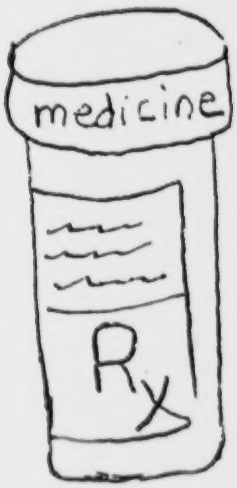
Teacher Activity Cards

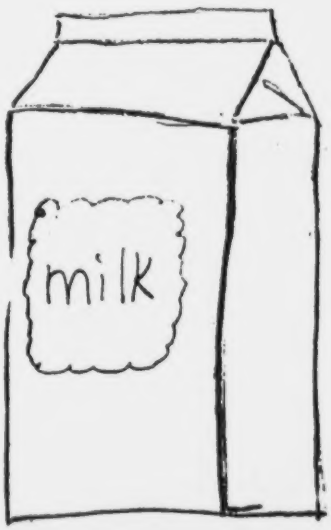


Teacher Activity Cards

Teacher Activity Cards







Prevention Procedures

Safety Precautions for Handling Dangerous Substances

Directions: Parent and Child should discuss the following safety rules for handling dangerous substances.

1. Dangerous household substances (including oven and drain cleaner, dishwasher detergent, furniture polish, bleach, gasoline products, hair care products, lotions, etc.) should be kept out of reach of children. They should be stored either on high shelves or in locked cabinets.

2. Store dangerous substances in one or two designated areas of your home. Poisonous substances should be stored away from food items.

3. All products should be kept in their original containers with their labels.

4. Keep products that can be absorbed by the skin away from children. These products include weed killer, fertilizers, and insect sprays.

5. Cosmetics or perfumes can be toxic if they are swallowed.

6. Medicines and vitamins should be labeled and kept out of reach and sight of children.

7. Some plants and flowers are poisonous if they are eaten. A florist will be able to tell you which plants may be dangerous.

8. Liquor and cigarettes should be put in a safe place, unavailable to children.

CHILDREN CAN HELP

Directions: Write three personal rules that you will follow when handling medicine, poisons, and unknown substances.

1. _____

_____

2. _____

_____

3. _____

_____

Emergency!

Reporting Accidents

TO REPORT A POISONING OR INJURY THAT HAPPENED AT YOUR HOME:

1. DIAL THE EMERGENCY TELEPHONE NUMBER_____

2. WHEN SOMEONE ANSWERS, SAY:

   A. "HELLO, MY NAME IS_____. I AM_____ YEARS OLD.

   B. "I WOULD LIKE TO REPORT A (POISONING, PERSON HURT). MY ADDRESS IS_____

   _____ _____.

   MY TELEPHONE NUMBER IS_____.
   "PLEASE SEND HELP."

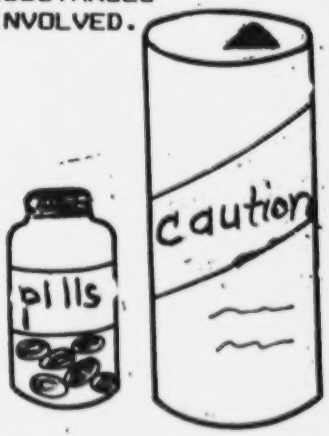
   C. KEEP HOLDING THE TELEPHONE RECEIVER TO YOUR EAR UNTIL AFTER THE PERSON ON THE OTHER END HANGS UP.

REMEMBER!

KEEP CALM

CALL FOR HELP IMMEDIATELY

COLLECT ALL SUBSTANCES INVOLVED.



Poison control center number:_____

Police or emergency number:_____

Doctor's number:_____

Dial "0" for operator to ask for help.

STORYTIME

Story One

One day, a baby was crawling on the kitchen floor. He opened the cabinet under the sink and saw lots of bottles there. He picked up the bright yellow bottle and put it in his mouth.

Story Two

Jamal likes the taste of the cough drops his mom gave him for his cold. He climbed up to the medicine cabinet and took two cough drops.

Story Three

William liked to watch his father shave. The shaving cream looked like whipped cream. One day, he decided to taste the shaving cream.

Story Four

Jasmine wanted to go on a class trip. Her mom said that she could go only if her cold was better. When mom wasn't looking, Jasmine took an extra spoonful of medicine so she could get well fast.

Story Five

Eddie is sick. His father takes him to the doctor. The doctor gives his father a prescription for medicine. His father buys the medicine and gives it to Eddie.

Directions: Read the story. Pretend you are one of the people in the story. Use the steps for problem solving to help you make a decision.

Raymond and Melody went to a birthday party. Melody's big sister has come to pick them up to go home. She tells the children to get in the car. She is acting strange and looks very sleepy.

Raymond thinks that she has been drinking alcohol. He says to Melody, "I don't think we should ride home with her." Melody says, " Stop worrying, she's a safe driver. Get in the car Raymond."

What should Raymond do? What would you decide to do?

1. The Problem

2. The Choices

3. The Consequences

4. Your Solution

Directions: Read the story. Pretend you are one of the people in the story. Use the steps for problem solving to help you make a decision.

Jerome is playing baseball with his friends. He has just run to first base. Alan is standing at first base. Alan says, "My older sister is having a party." "All of us are going to sneak in after the game. They're having beer." Jerome says, "I don't think I can go." "Everybody is going. If you don't go you'll miss all of the fun," says Alan.

What should Jerome do? What would you decide to do?

1. The Problem

2. The Choices

3. The Consequences

4. Your Solution

Directions: Read the story. Pretend you are one of the people in the story. Use the steps for problem solving to help you make a decision.

Sam is playing in the park. He sees his friend Corey. Corey is sitting with an older boy. Corey says hello to Sam and asks him to join them. He passes Sam a bottle of wine and says, "Have some of this. It tastes just like juice." Sam does not want to drink the wine because he knows that it is not good for him. Corey says, "Come on, don't be a chicken."
What should Sam do? What would you decide to do?

1. The Problem

2. The Choices

3. The Consequences

4. Your Solution

Directions: Read the story. Pretend you are one of the people in the story. Use the steps for problem solving to help you make a decision.

Tracey has a bad headache. She is home alone in the house. There are pills in the medicine cabinet that her mother uses for her headache. Tracey remembers that once before when she had a headache, her mother gave her half of the pill.

What should Tracey do? What would you decide to do?

1. The Problem

2. The Choices

3. The Consequences

4. Your Solution

Directions: Read the story. Pretend you are one of the people in the story. Use the steps for problem solving to help you make a decision.

Jose and Carmen are painting at the kitchen table. Jose spills some red paint. Carmen goes to the cabinet to get a cleaner. She notices that the cleaner says, "Caution."

What should Jose and Carmen do? What would you decide to do?

1. The Problem

2. The Choices

3. The Consequences

4. Your Solution

Problem Solving

PROBLEM SOLVING

Directions: Look at the picture. Follow the steps of problem solving.

(1) The Problem

(2) The Choices

(3) The Consequences (What might happen?)

(4) My Solution

_____

HAS COMPLETED
INSTRUCTION IN

DRUG AWARENESS

Name_____ Date _____

Post Test

Directions: Fill in the circle above the word(s) that correctly completes each sentence.

1. When a substance could cause harm to the body it is _____.

nutritious safe dangerous

2. Alcohol is a _____.

treat pill drug

3. Wine contains the substance _____.

caffeine nicotine alcohol

4. Poisons can _____ the body.

help harm hide

5. _____ contains the drug nicotine.

alcohol coffee cigarettes

6. _____ are sometimes placed on substances to alert us to danger.

yellow lights warning labels large letters

7. _____ are used to give needed minerals to the body.

medicines vitamins drugs

8. The word _____ is sometimes used on substances that are harmful.

stop | go | caution

9. You can safely take medicine when _____.

you want some | it looks like it taste good | you are sick

10. _____ can safely give you medicine.

parents | friends | strangers

11. Substances without labels should be_____.

tasted before used | smelled before used | thrown away

12. Medicines and other dangerous substances should be kept _____.

in the bathroom | in the kitchen | out of the reach of children

13. The first thing that is affected by drinking alcohol is _____.

breathing | judgement | voice

14. Cigarette smoking can cause _____.

tooth decay | happiness | cancer

Directions: In your own words, fill in the answers.

15. Name three harmful household substances.

1. _____

2. _____

3. _____

16. Name three words that are sometimes shown on poisons to alert us to danger.

1. _____

2. _____

3. _____

17. Name three parts of the body that are affected by cigarette smoking.

1. _____

2. _____

3. _____

18. Write one rule to follow for safe substance use.

_____

_____

_____

19. Write two sentences that will help you say no to using substances that are dangerous.

1. No, _____

2. No, _____

20. You are playing at a friends house. Your friend asks you to try smoking a cigarette. Would you_____?

do it with your friend to try it

take only one puff to satisfy your friend

tell your friend "NO", it might make you sick

Follow-up Activities

Activity #1- Game "concentration"

Materials- Two sets of pictured activity cards are cut from the worksheets, Teacher Activity Cards.

Object of the Game- The object of the game is to provide reinforcement in defining drug related terms. The player that matches the most terms to their definitions wins the game.

Playing the Game

Using the activity cards from the learning package, students will work in pairs to play concentration. All cards are placed face down on a table. The players must choose two cards each time to match definitions to terms. If a player gets a matched set, those cards are removed from the playing table and the player gets another chance. If the player does not choose a matched set, the turn is lost to the other player. The game is played until all cards are removed from the table.

Activity #2- Classroom Display- "The Healthy Me"

Materials- Magazines, paste, scissors, construction paper

Objectives- To provide reinforcement in: classifying safe and dangerous substances; identifying choices that can be made to protect a healthy body; enhancing self-esteem.

Learning Activity

Students work in pairs to trace an outline of their bodies. Each learner will draw and color their bodies. Students cut out illustrations of safe substances from magazines and paste them on the middle section of their body cut out.

Activity #3- Coloring Book

Materials- Coloring book entitled "Crack Down On Drugs." Original copies for each student were obtained from Department of Health Services; crayons.

Objectives- To review all concepts taught during instruction.

Learning Activity- Read and discuss each page of the book. Students will complete the pages by coloring them.

Activity #4- Worksheets

A select group of activity worksheets were taken from the reproducible activity book, Substance Prevention Activities For Elementary Children.

APPENDIX J

BEHAVIOR CHECKLIST

Date_____
Student #_____

Behavior Checklist

1. _____ Orally defines substance related terms.
2. _____ Identifies medicines and other substances that can be used to maintain health.
3. _____ Explains how and when medicines and other substances are presently being used.
4. _____ Explains who should administer medicines.
5. _____ Names drugs contained in cigarettes, beer, wine, and liquior.
6. _____ Identifies words seen on labels that alert to danger.
7. _____ Explains how dangerous substances can harm the body.
8. _____ Explains precautions currently being taken to prevent substance misuse.
9. _____ Demonstrates confidence and supports choices made with factual information.
10. _____ Discusses ways of avoiding the use of dangerous substances in situations with friends.

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